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AUTHORITY

**CNO [N772] ltr N772A/6U875630, 20 Jan
2006, ONR ltr, 31 Jan 2006**

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AUTHORITY

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2
AU 910343

MC REPORT 011
Volume 8

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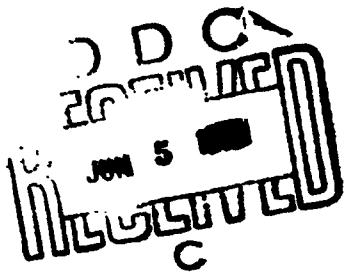
ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW

VOLUME 8
AREA 3B, WINTER
PREDICTIONS FOR PASSIVE SONAR

October 1972

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LONG RANGE ACOUSTIC PROPAGATION PROJECT



OCEAN SCIENCE PROGRAM
MAURY CENTER FOR OCEAN SCIENCE
Department of the Navy
Washington, D.C.

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Test and Evaluation: 5 JUN 1973. Other requests
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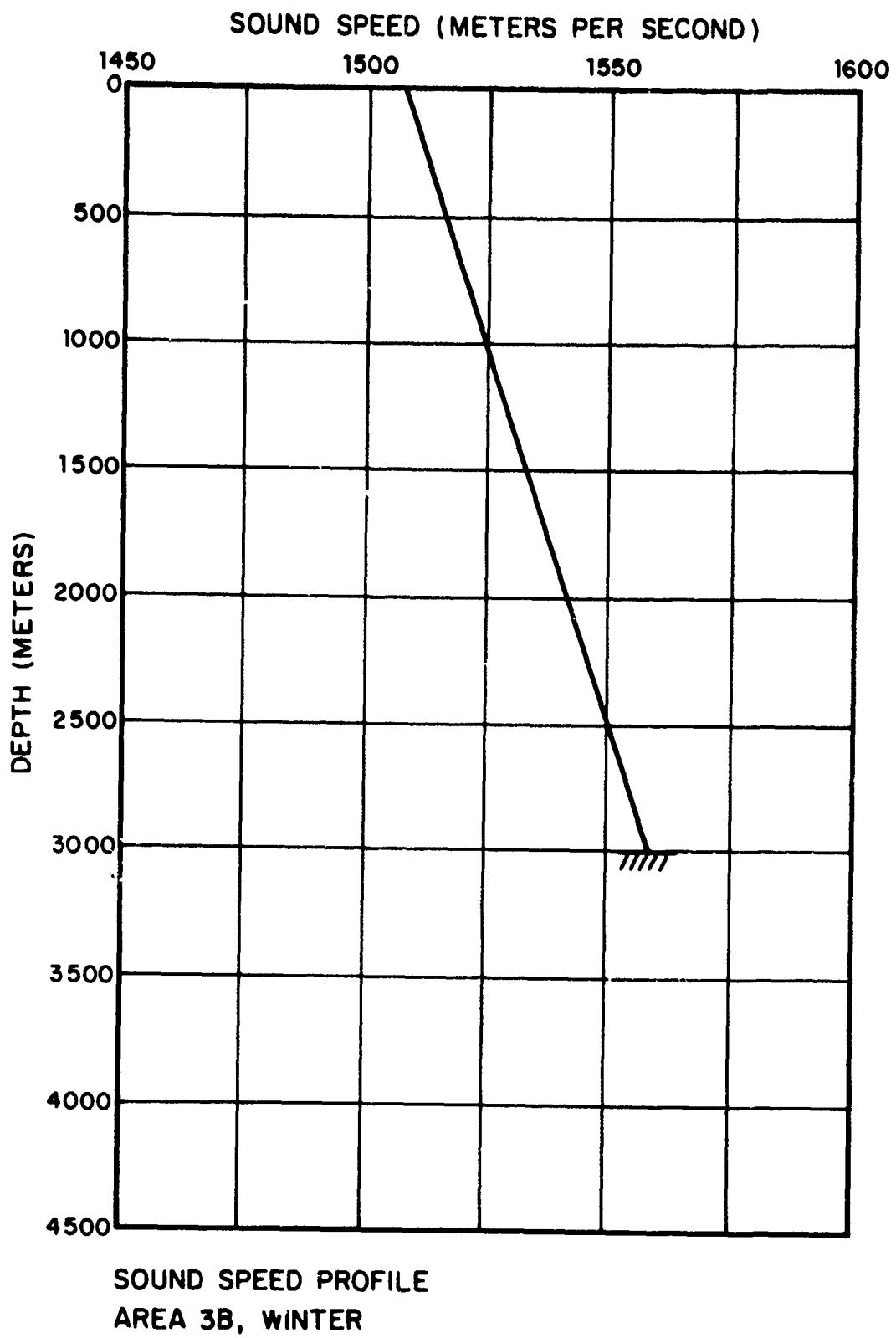
Director, Long Range Acoustic Propagation Project (ONR Code 102-08)

Arlington, Va. 22217

ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS
FOR ASW

Volume VIII: AREA 3B WINTER
PREDICTIONS FOR PASSIVE SONAR

Refer to Volume I of this report for an explanation of the
plot format and descriptions of models and ocean areas.



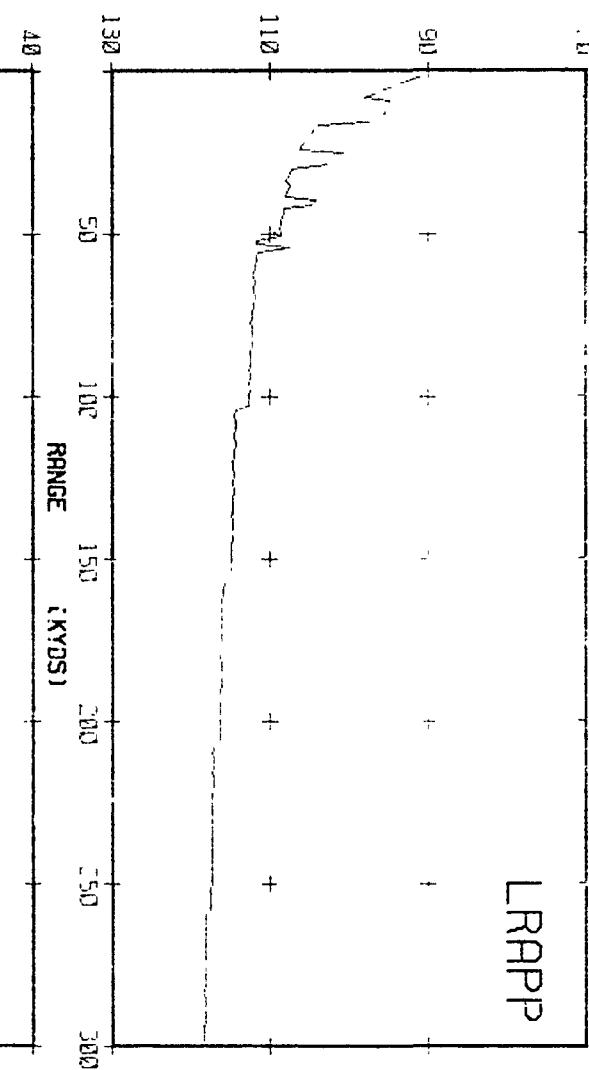
AREA 3B WINTER

S 20 R 60 F 10

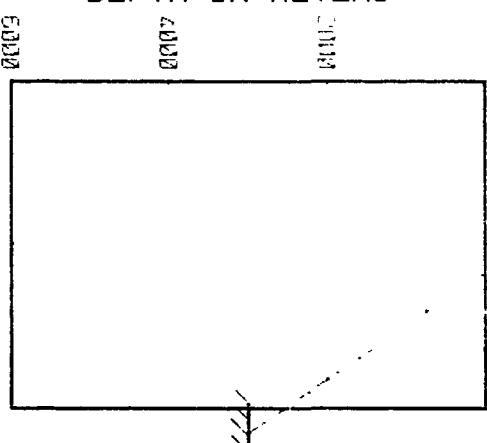
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LRAFP

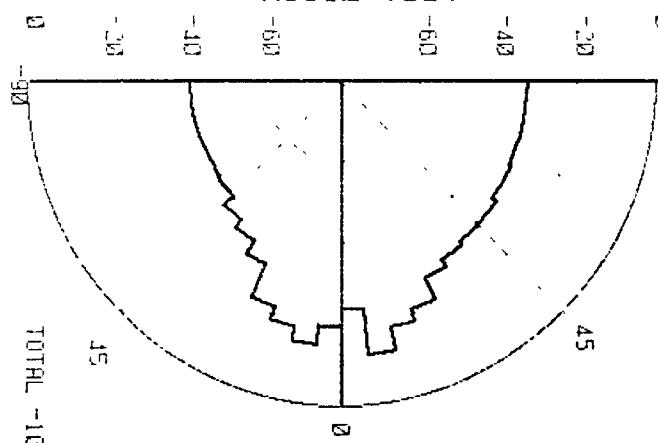
DB LOSS



DEPTH IN METERS



NOISE (DB)

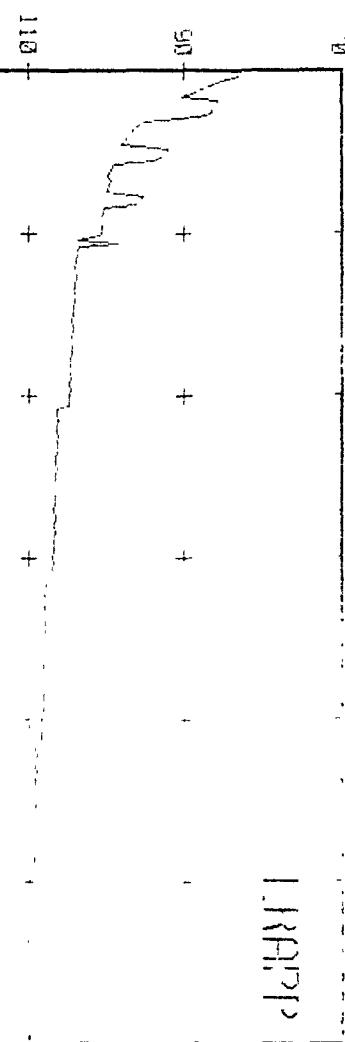


-1-

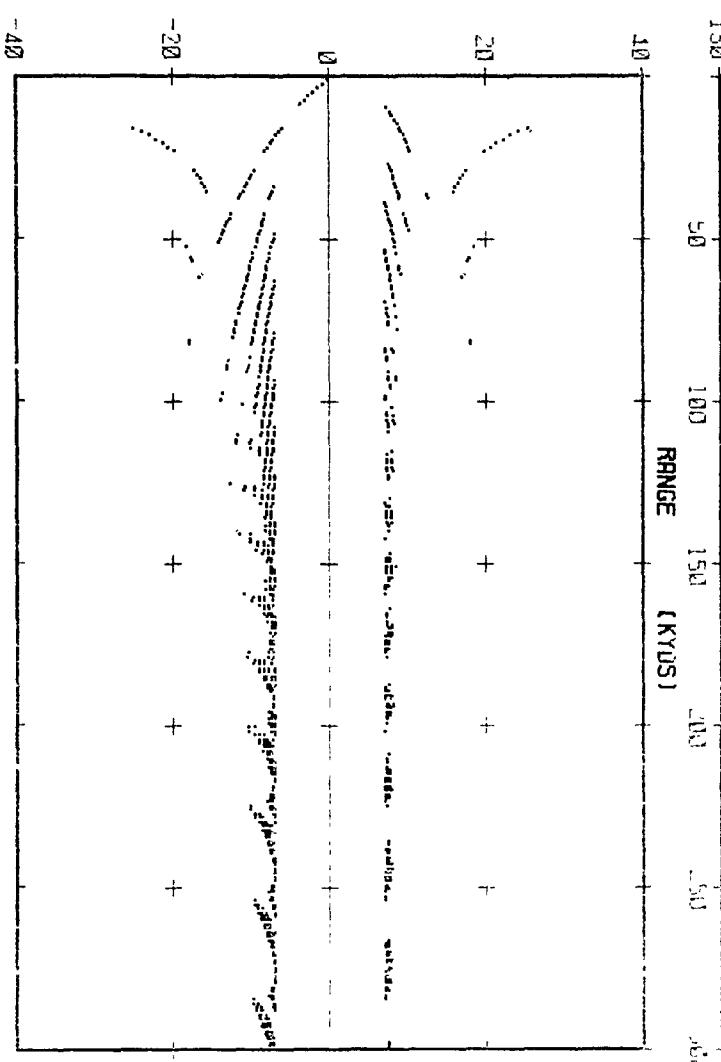
FLG R 38 WINTER

15°N 115°E 10°W 15°S

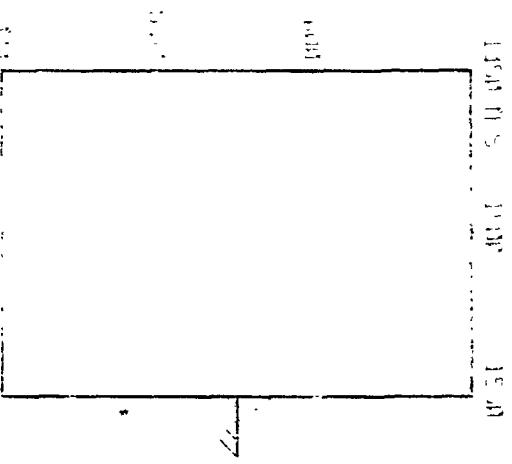
DB LOSS



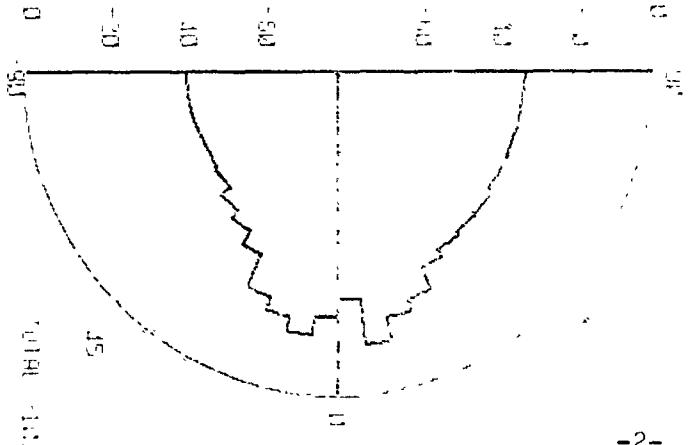
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

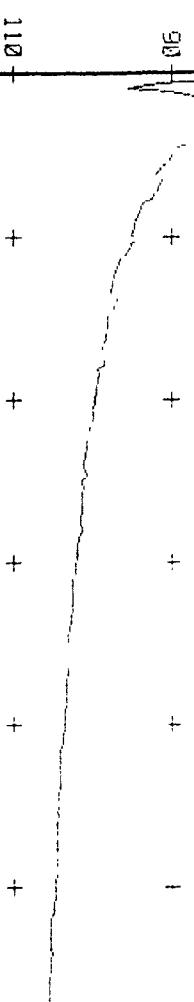
AREA 3B WINTER

S 300 R 62 F 10

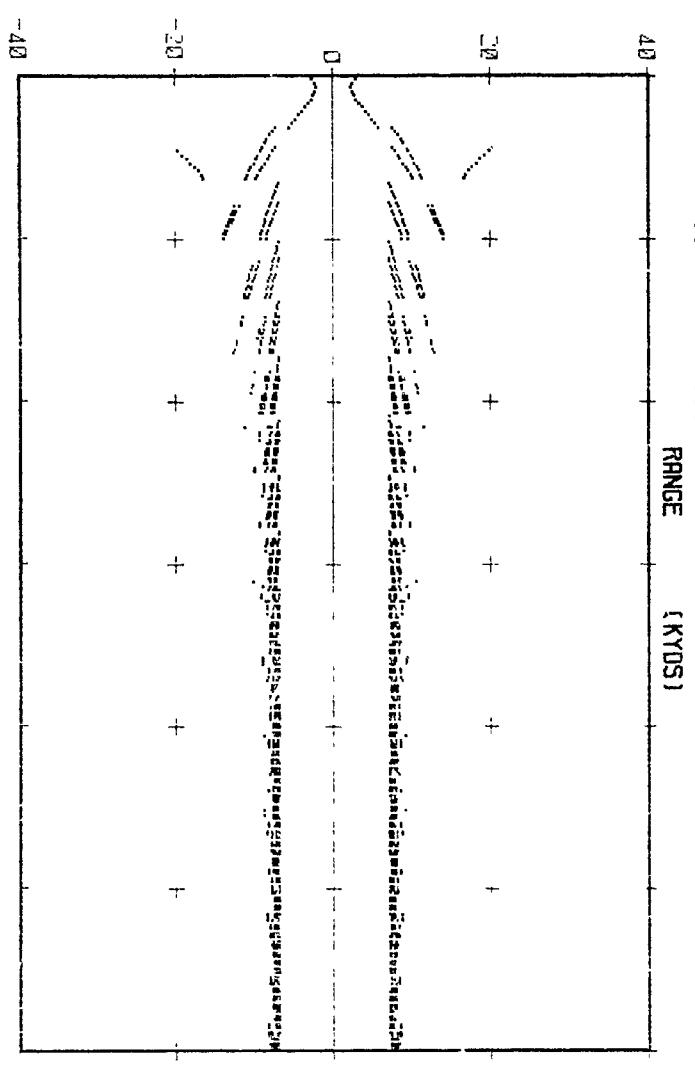
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LRAPP

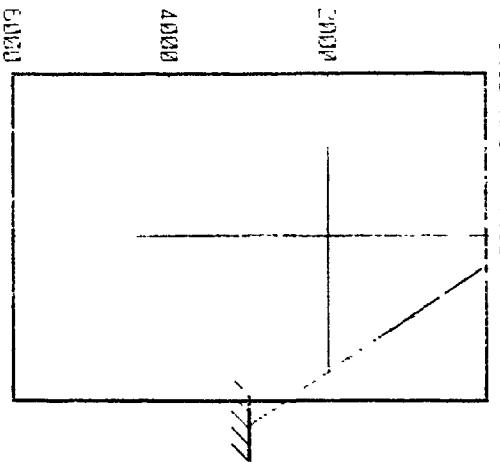
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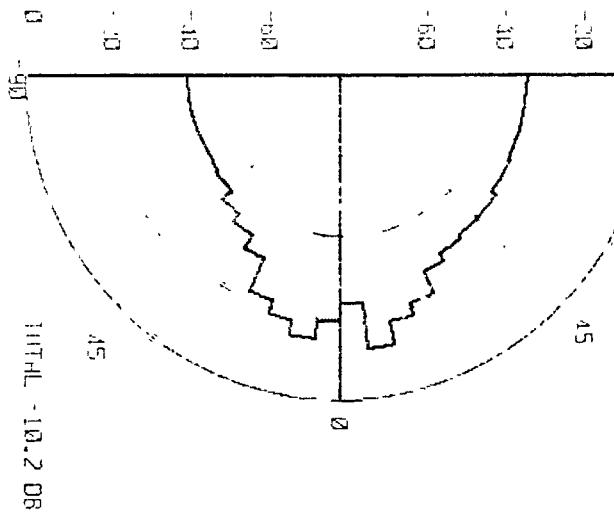
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



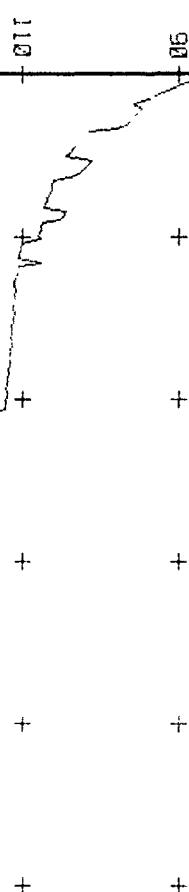
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AREA 3B WINTER

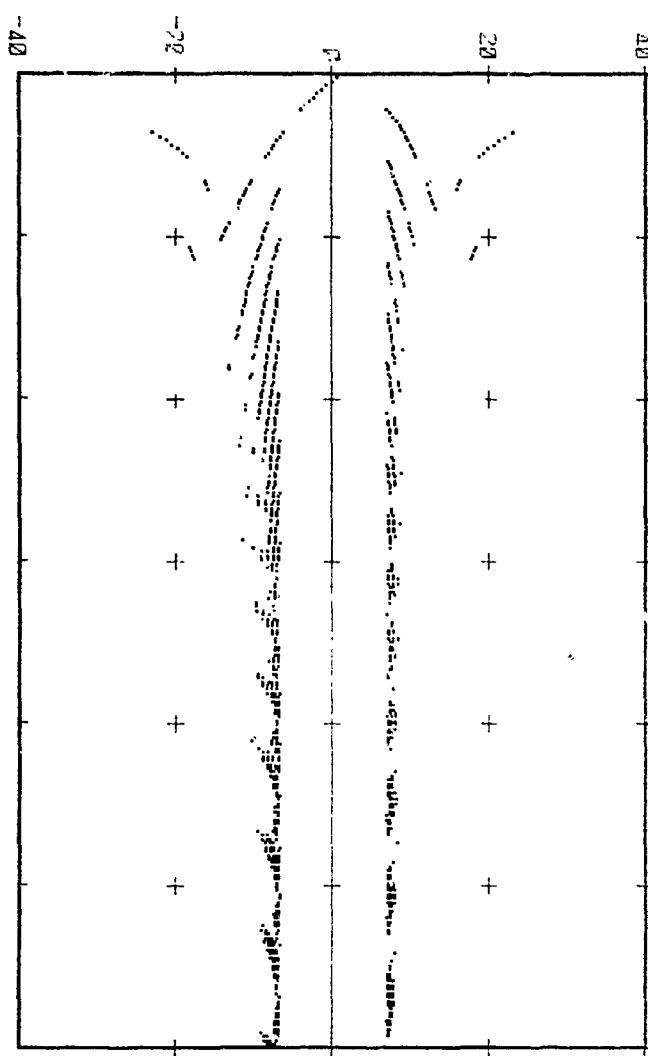
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1150 11:15 1400 1550

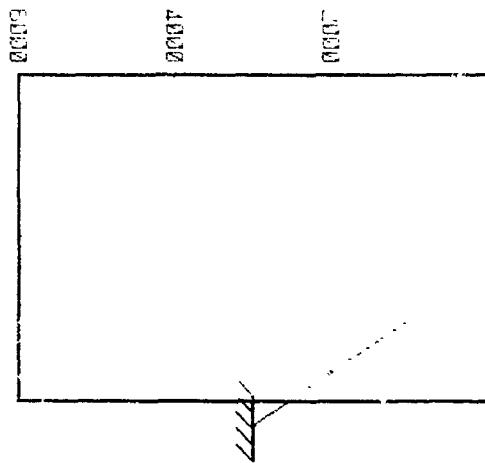
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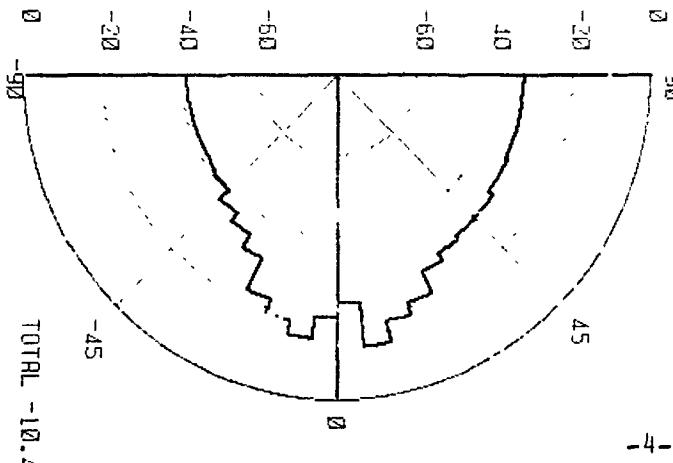
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



-4-

TOTAL - 10.4 DB

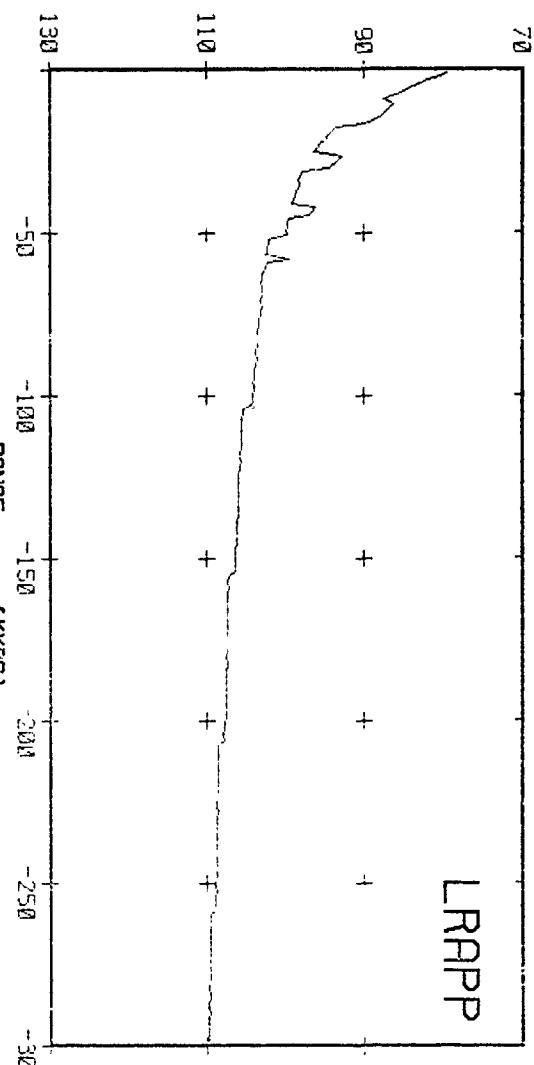
70

AREA 3B WINTER

S 50 R 100 F 10

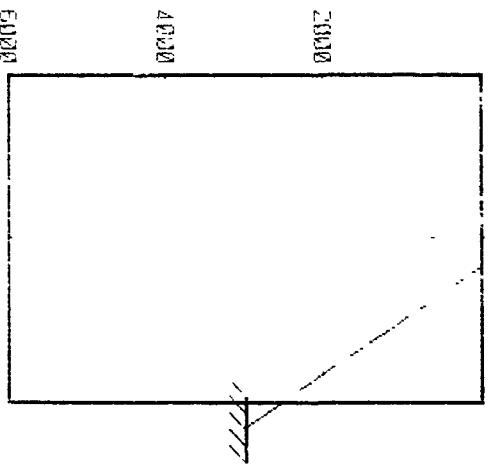
1450 M/S 1500 1550

DB LOSS

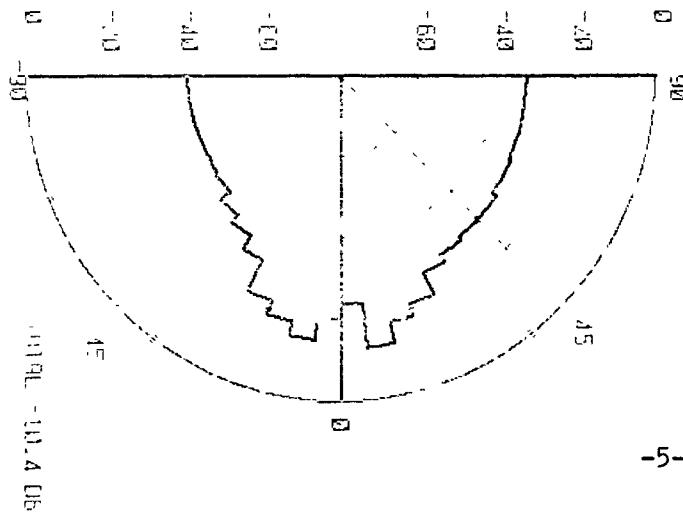


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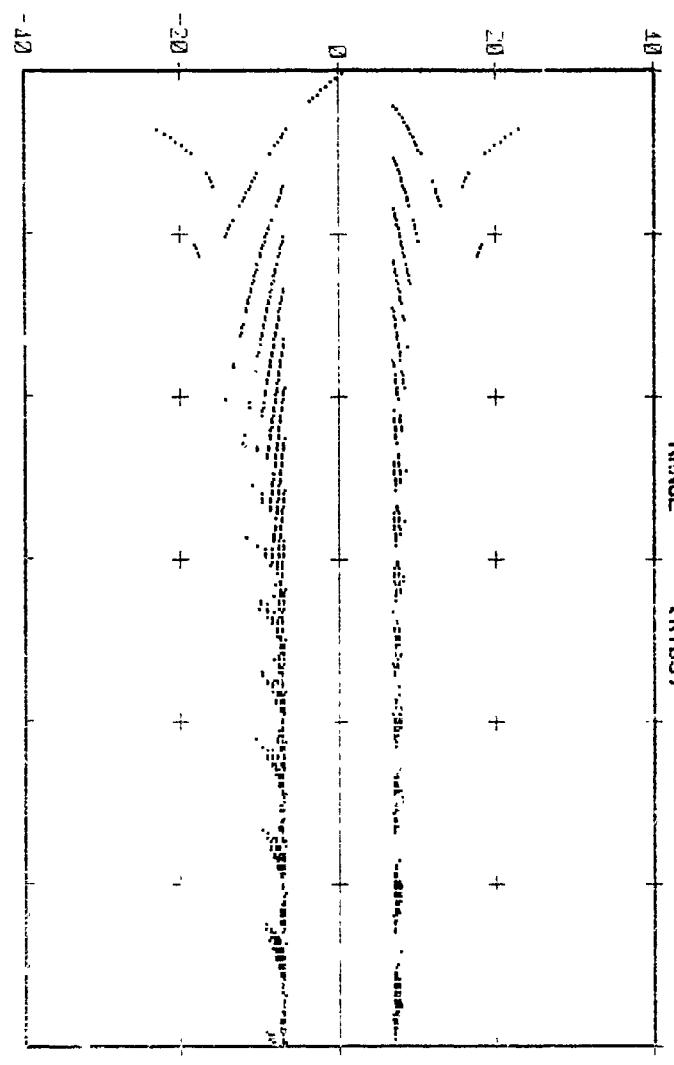
DEPTH IN METERS



NOISE (DB)



ARRIVAL ANGLE



-42

"D

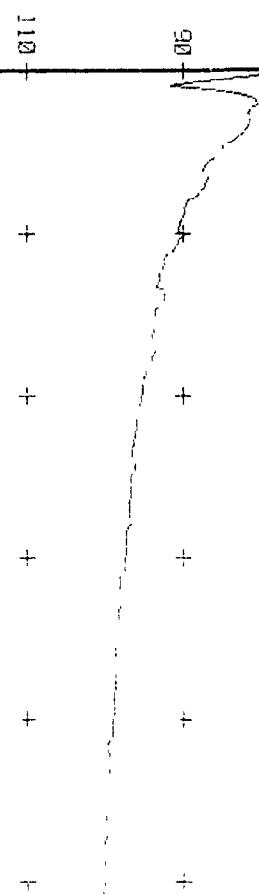
AREA 3B WINTER

S 36°22' R 107° F 1G

1350 1100 1000 1500

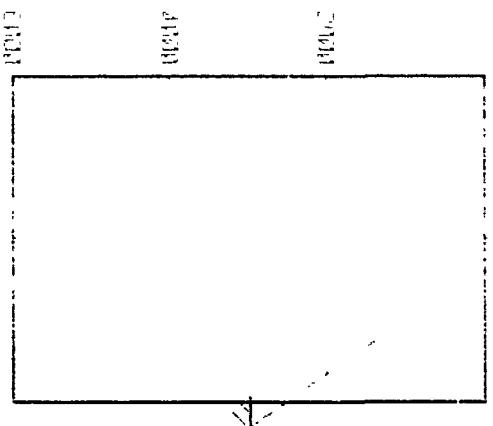
"D

DB LOSS



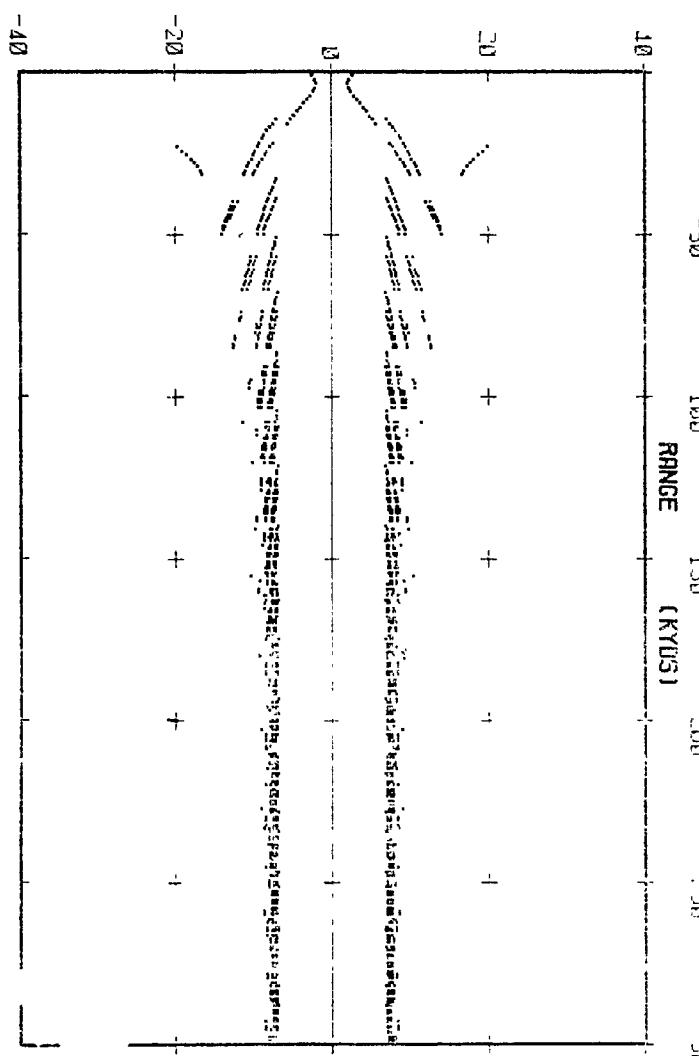
LFRPP

DEPTH IN METERS

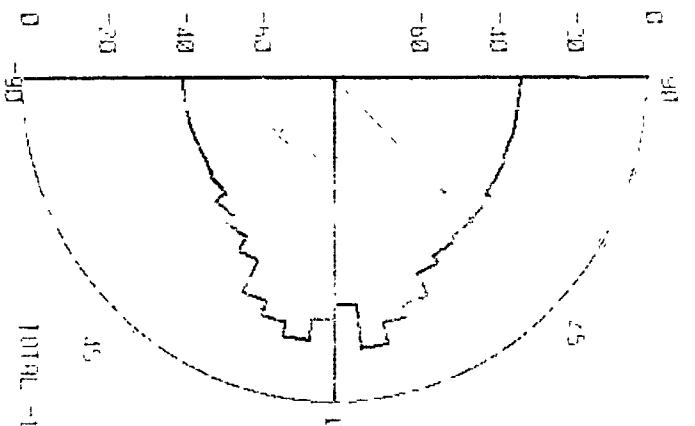


-6-

ARRIVAL ANGLE



NOISE (DB)



1000L -100,4 38

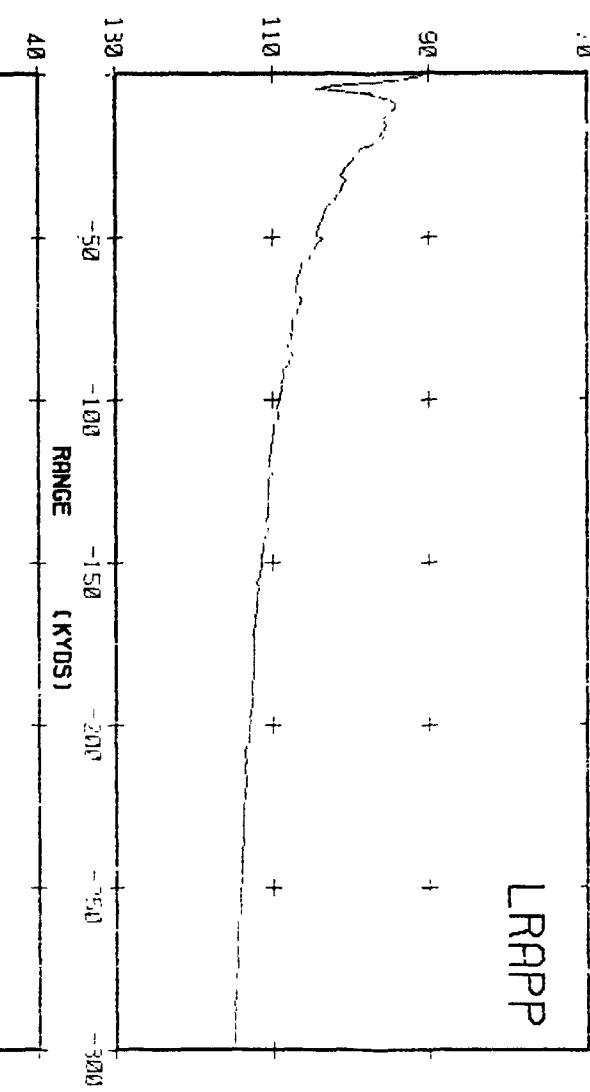
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S 20 R 300 F 10

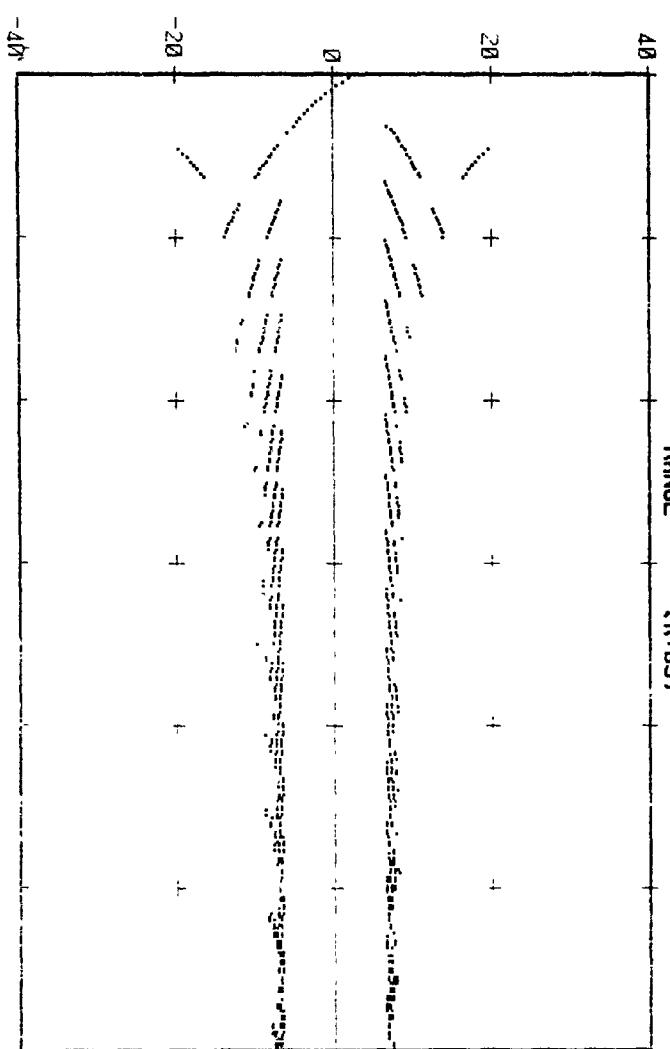
1450 145 1500 1550

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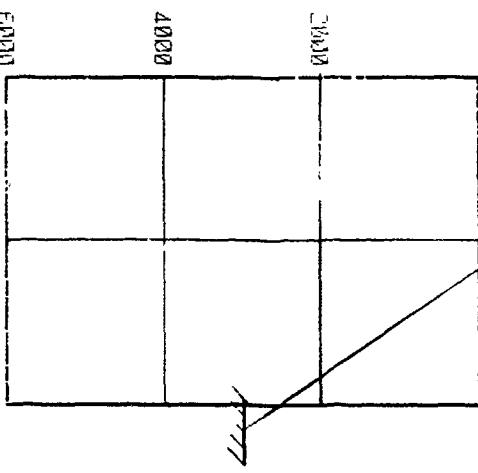
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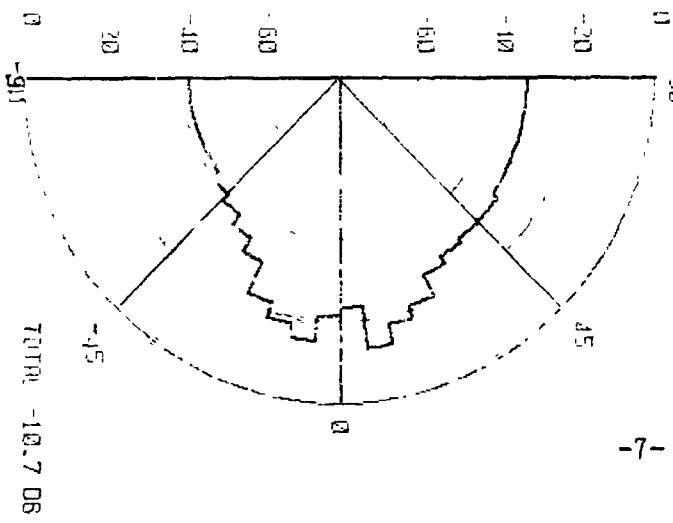
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



-7-

70

AREA 3B WINTER

S 50 R 303 F 10

1440 H 1441 1550

LRAPP

DB LOSS

130
110
100
-50
-100
-150
-200
-250
-300

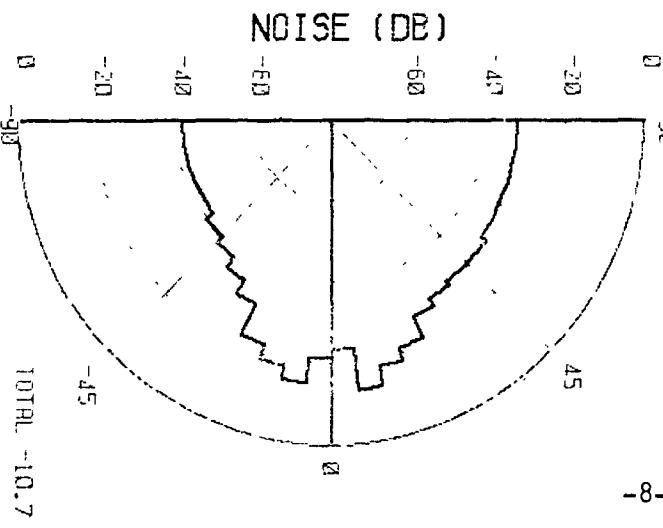
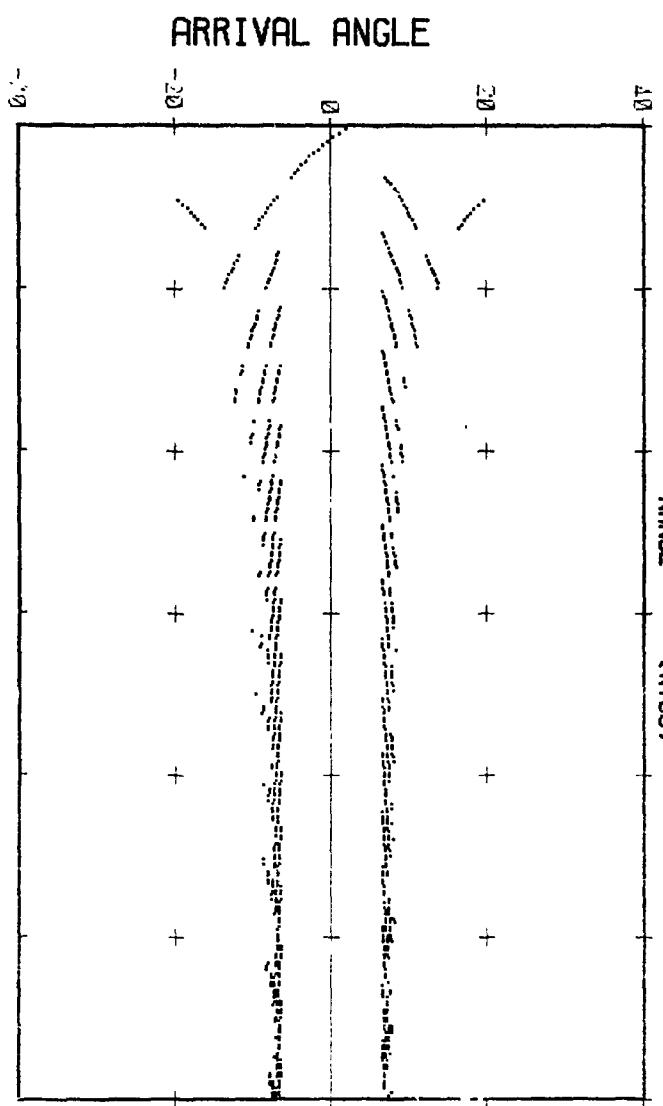
RANGE (KILOS)

0
6000

0 90

DEPTH IN METERS

M



-8-

70

AREA 3B WINTER

S 300 R 300 F 10

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+ +

+ +

+ +

+ +

+ +

+ +

+ +

+ +

+ +

20

-50

-100

-150

-200

-250

-300

4000

2000

4000

2000

4000

2000

4000

2000

4000

2000

-9-

DEPTH IN METERS

NOISE (DB)

3

5000

20

4000

10

3000

60

2000

40

1000

70

800

50

900

60

1000

40

1100

30

1200

20

1300

10

1400

0

1500

0

1600

-10

1700

-20

1800

-30

1900

-40

2000

-50

2100

-60

2200

-70

2300

-80

2400

-90

2500

-10

2600

-20

2700

-30

2800

-40

2900

-50

3000

-60

3100

-70

3200

-80

3300

-90

3400

-100

3500

-110

3600

-120

3700

-130

3800

-140

3900

-150

4000

-160

4100

-170

4200

-180

4300

-190

4400

-200

4500

-210

4600

-220

4700

-230

4800

-240

4900

-250

5000

-260

5100

-270

5200

-280

5300

-290

5400

-300

5500

-310

5600

-320

5700

-330

5800

-340

5900

-350

6000

-360

6100

-370

6200

-380

6300

-390

6400

-400

6500

-410

6600

-420

6700

-430

6800

-440

6900

-450

7000

-460

7100

-470

7200

-480

7300

-490

7400

-500

7500

-510

7600

-520

7700

-530

7800

-540

7900

-550

8000

-560

8100

-570

8200

-580

8300

-590

8400

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8600

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8700

-630

8800

-640

8900

-650

9000

AIRER 3B WINTER

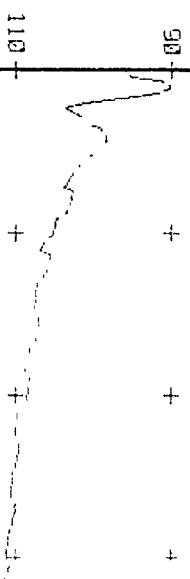
5 20 R 54.0 F 10

145.01 H 5 150.01

145.01

LRAPP

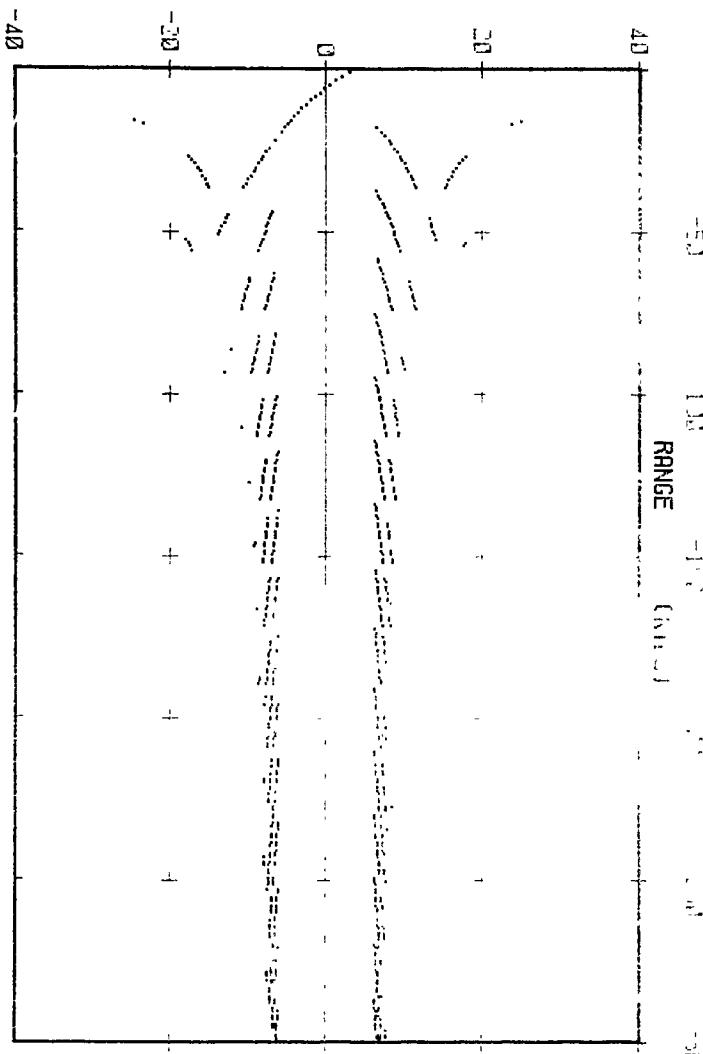
DB LOSS



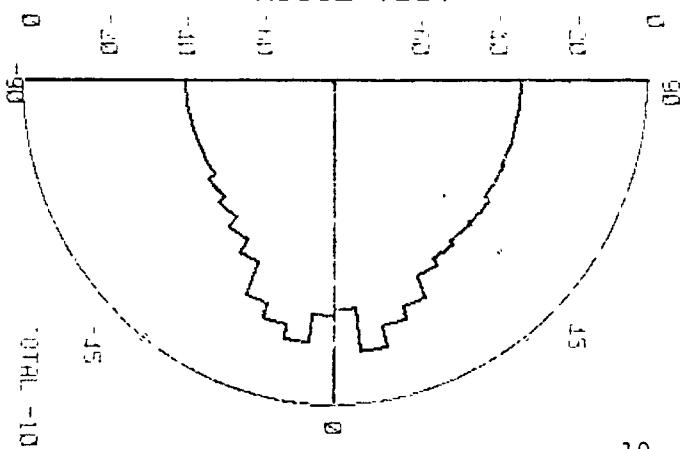
DEPTH IN METERS

100.00
300.00
500.00

ARRIVAL ANGLE



NOISE (DB)



-10-

70

AREA 3B WINTER

S 50 R 500 F 10

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

+

+

+

+

+

+

+

+

+

+

+

+

+

+

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130

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130

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ARRIVAL ANGLE

RANGE (KMS)

-100

-150

-200

-250

-300

-

-

-

-

-

-

-

-

-

-

-

-

-

-

-

DEPTH IN METERS

1000

500

0

-

-

-

-

-

-

-11-

NOISE (DB)

40

30

20

10

0

-

-

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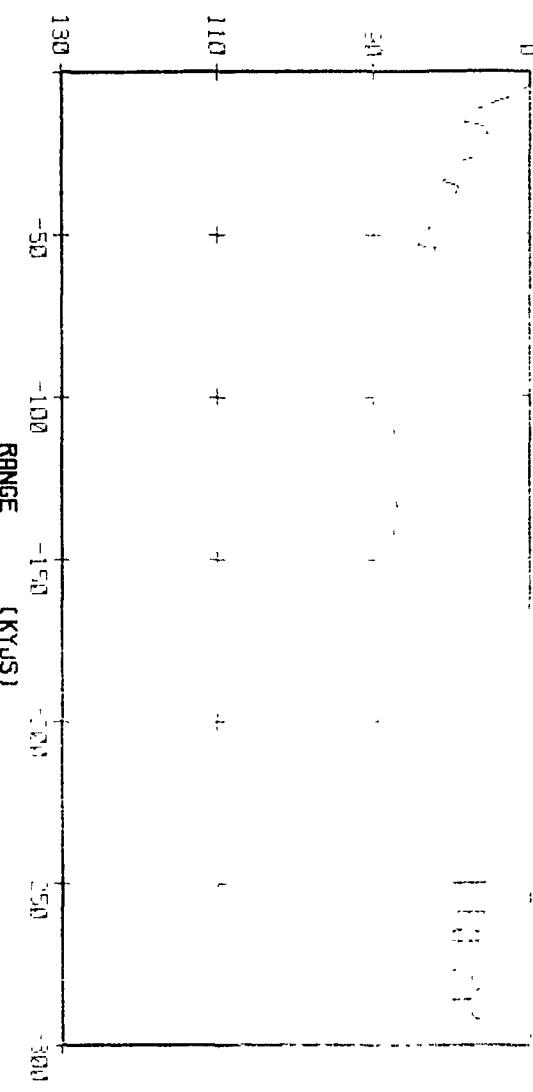
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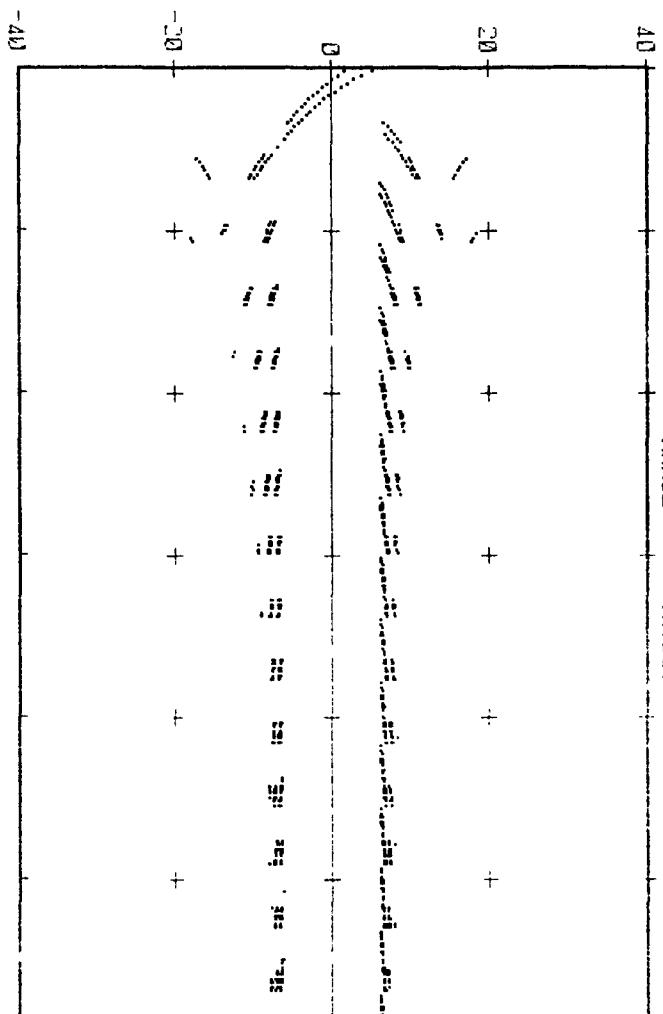
OPEN 3D WINTER

10

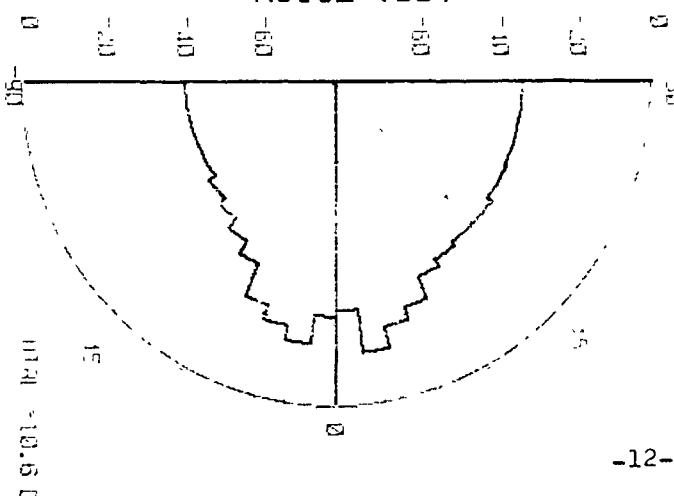
DB LOSS



ARRIVAL ANGLE



NOISE (DB)



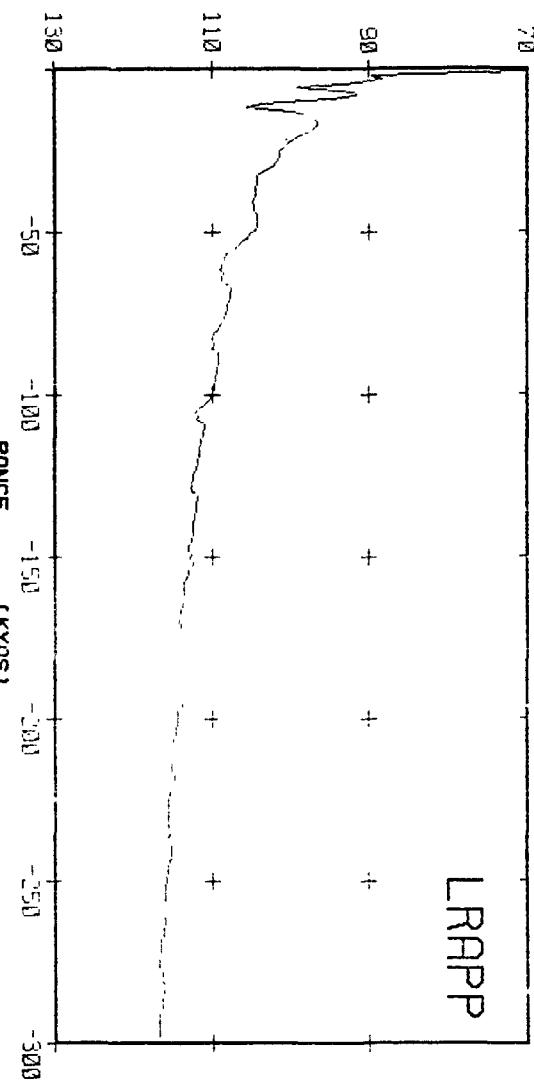
70

AREA 3B WINTER

S 20 R 1000 F 10

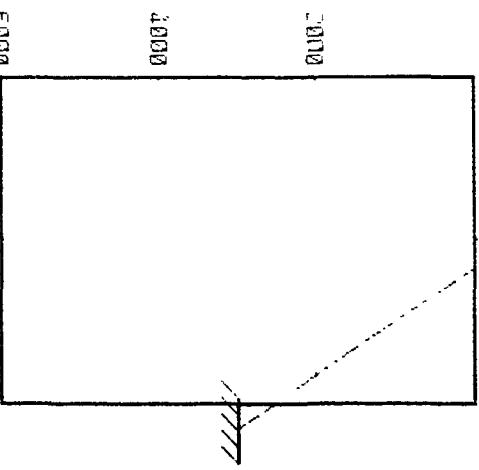
1450 M/S 1500 1550

DB LOSS

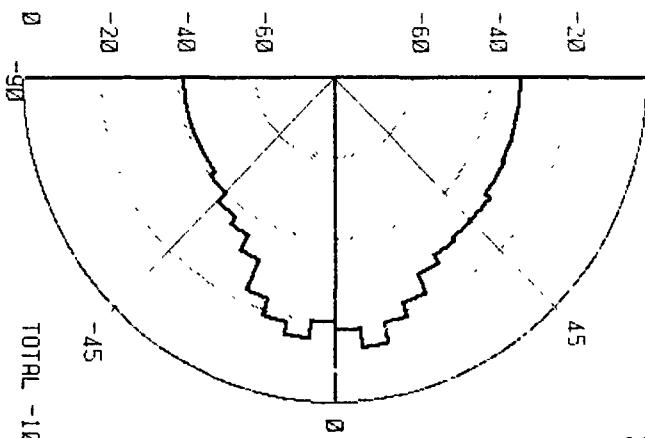


LRAPP

DEPTH IN METERS



NOISE (DB)



TOTAL -10.3 DB

70

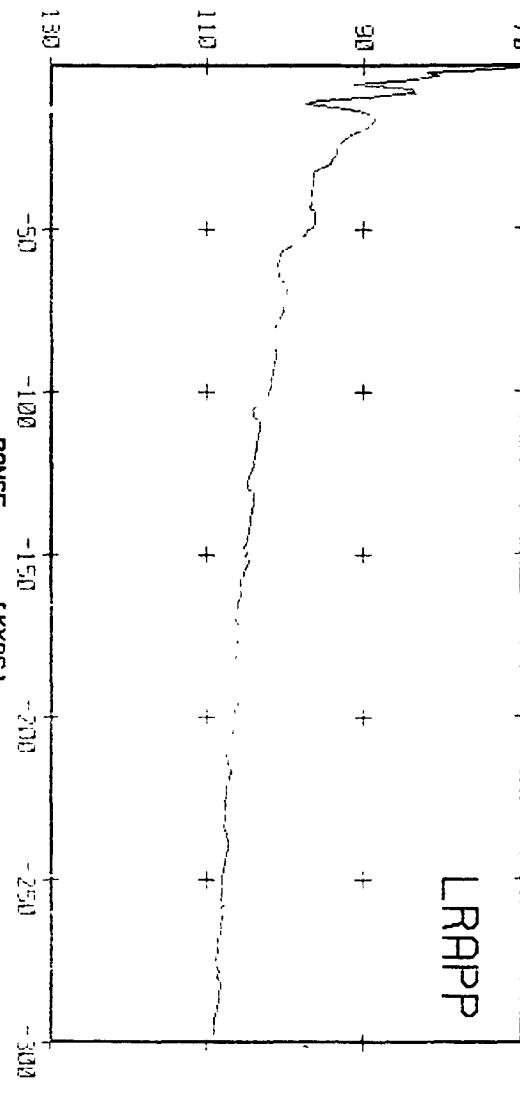
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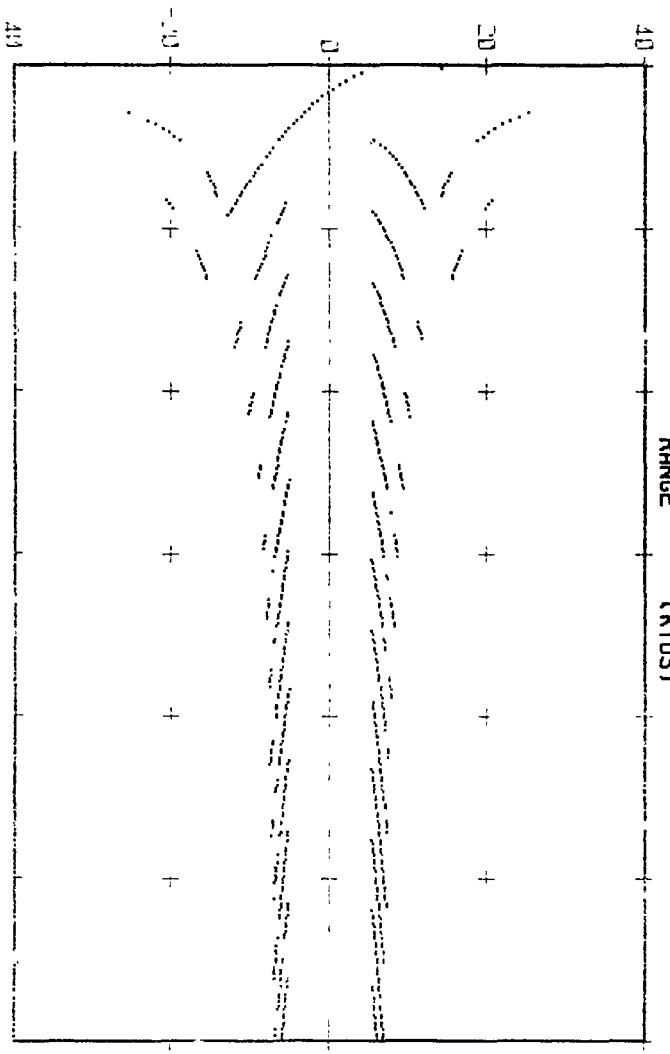
1450 1455 1500 1550

LRAPP

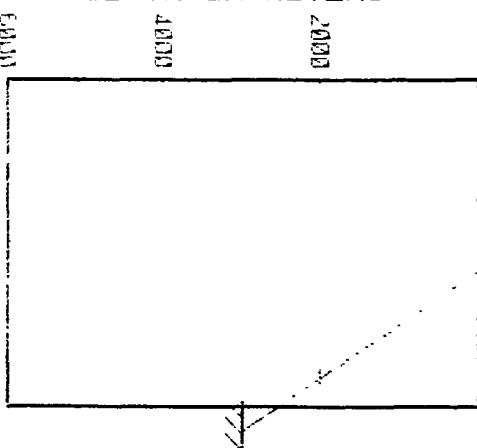
DB LOSS



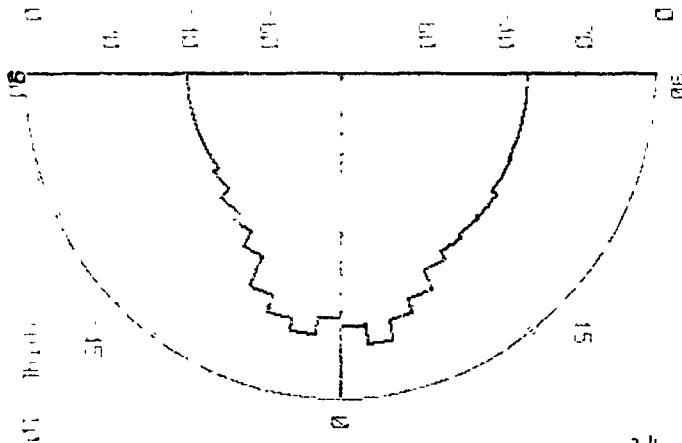
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



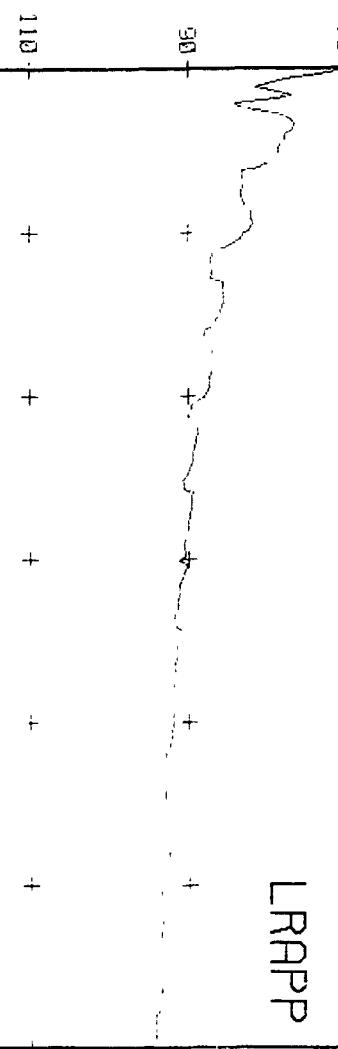
AREA 3B WINTER

S 300 R 1000 F 10

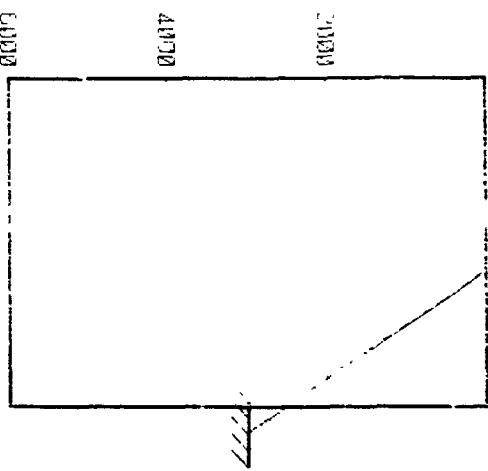
1450 M²/S 1500 1550

LRAFP

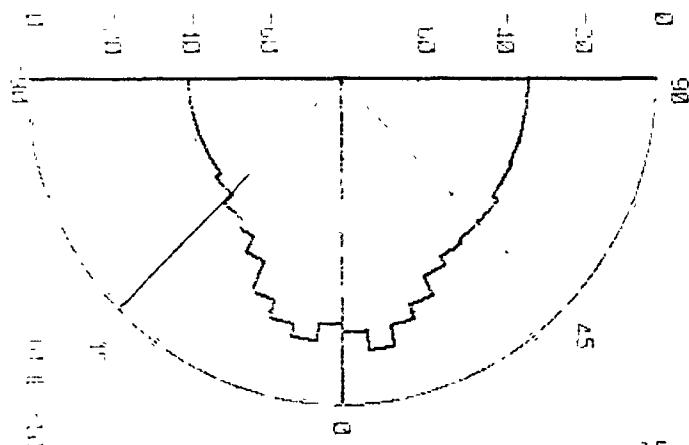
DB LOSS



DEPTH IN METERS



NOISE (DB)



-15-

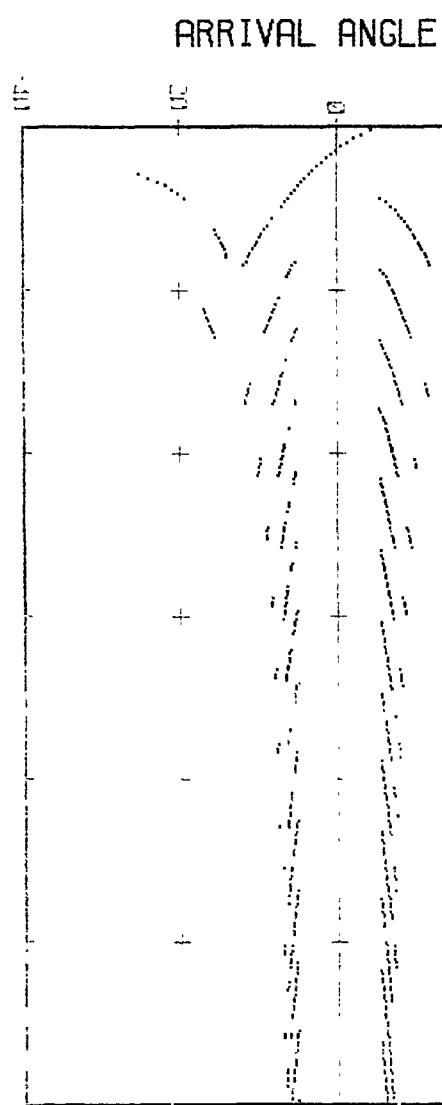
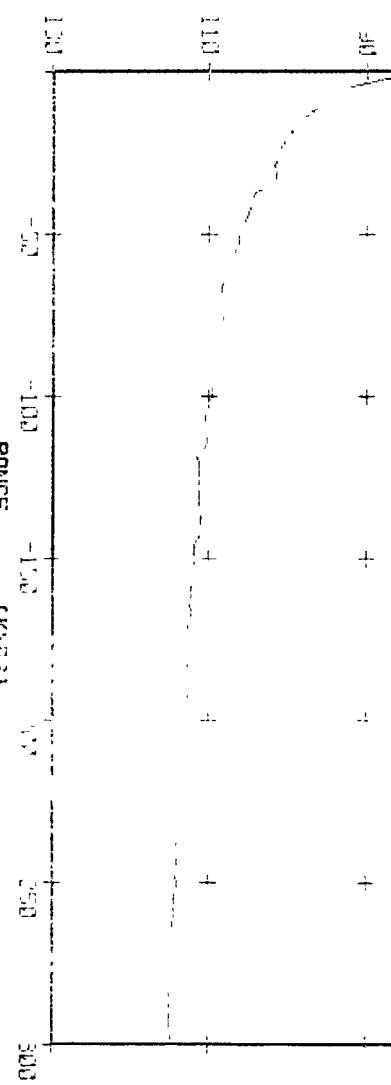


FIGURE 3B WINTER

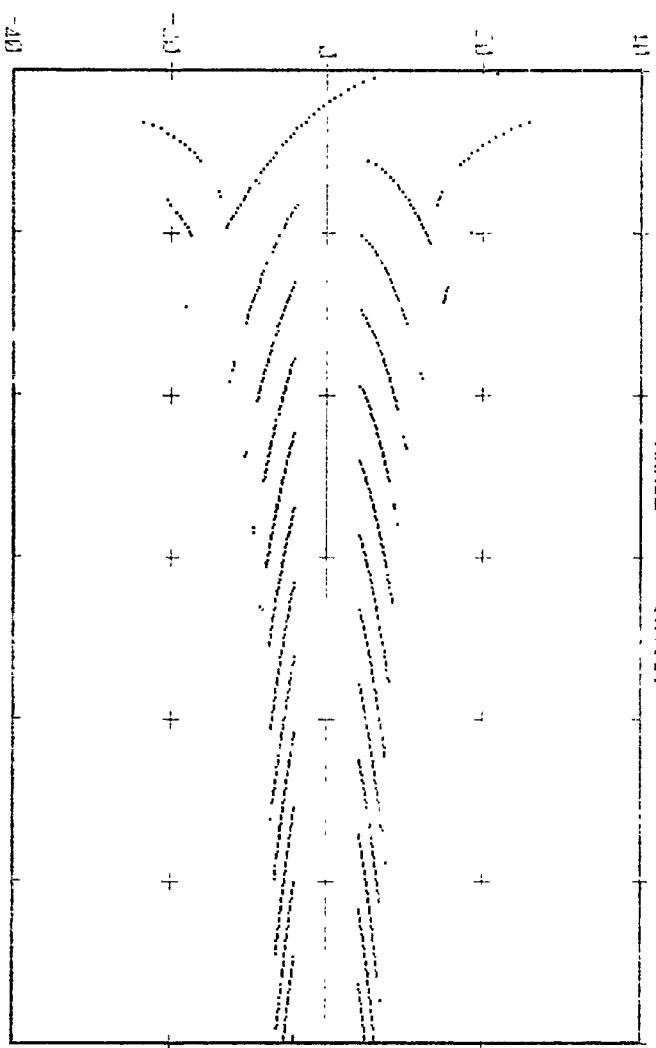
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LRRAPP

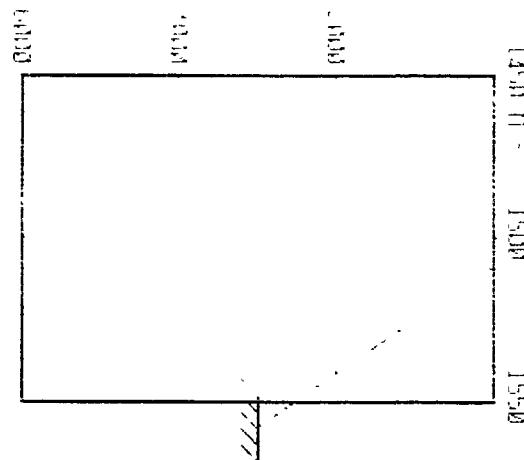
DB LOSS



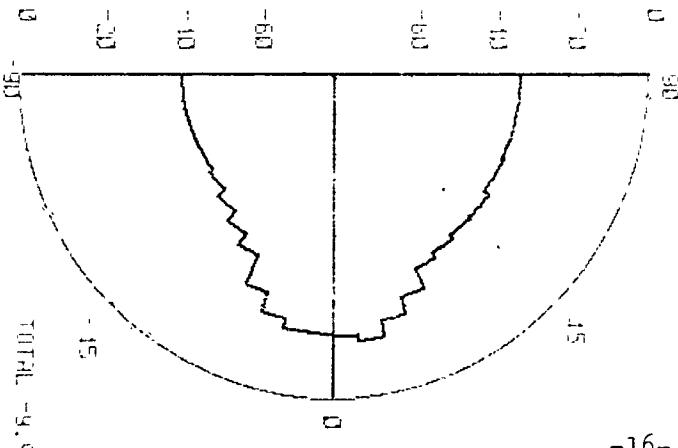
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (dB)



TOTAL -9.9 dB

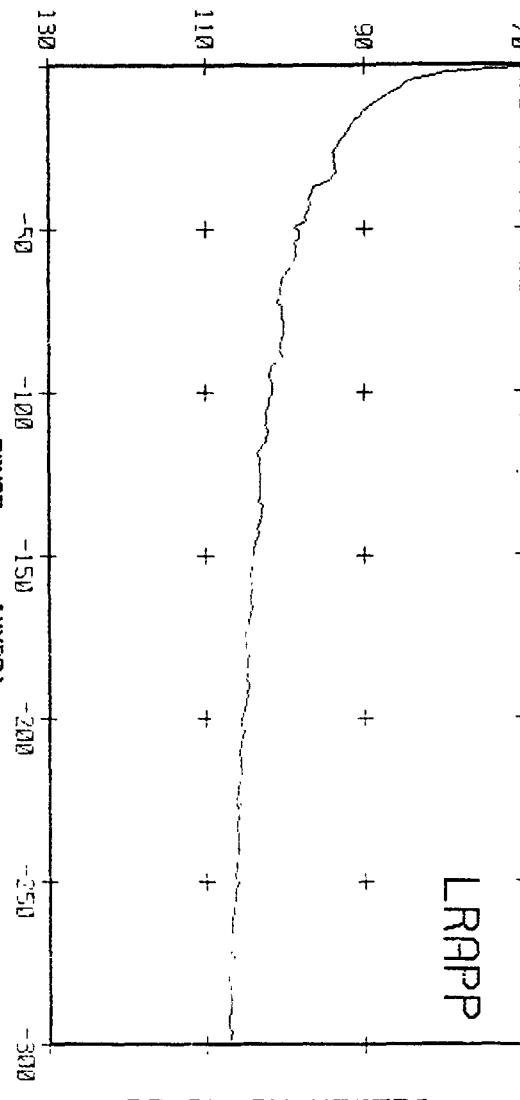
AREA 3B WINTER

S 50 R 1510 F 12

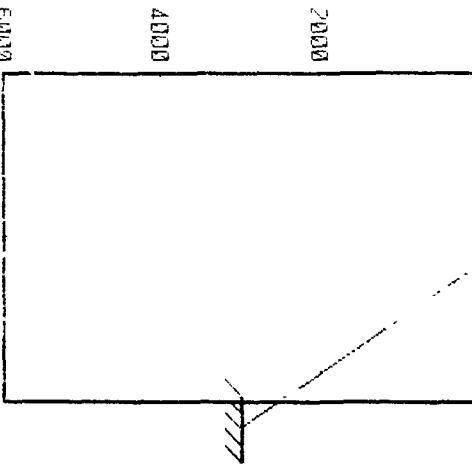
1450 11/5 1500 1550

LRAPP

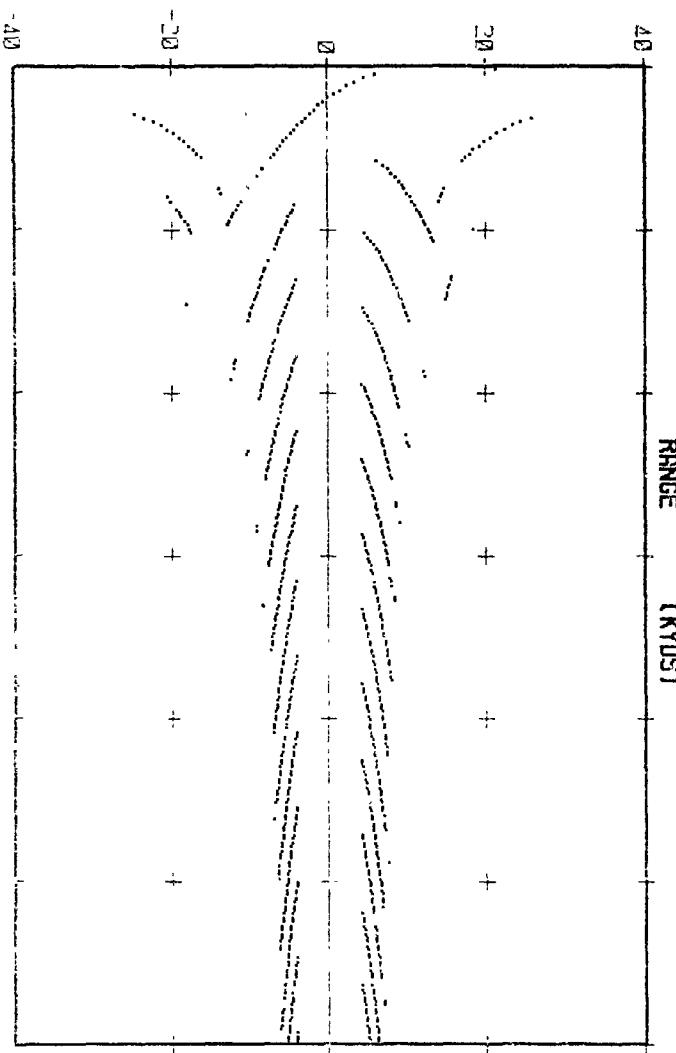
DB LOSS



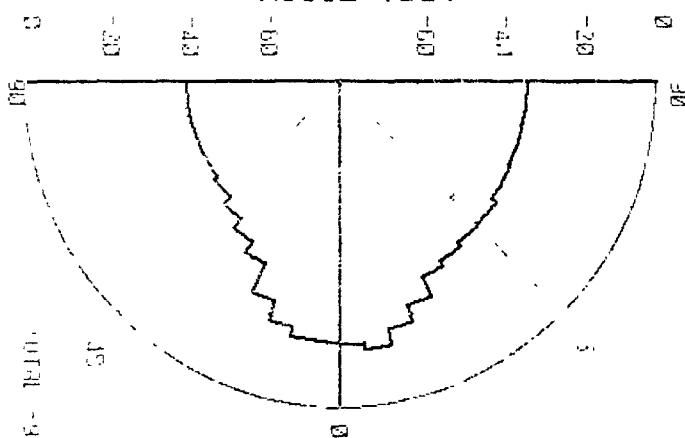
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

AREA 3B WINTER

S

LRRAPP

145N 115° E, 34P

155W

DB LOSS

90

+

+

+

+

+

+

+

130
110
100
90
80
70

RANGE [KMS]

100
80
60
40
20

DEPTH IN METERS

ARRIVAL ANGLE

-20
-10
0
+10
+20

NOISE (DB)

-60

-40

-20

0

+20

+40

+60

+80

7.0

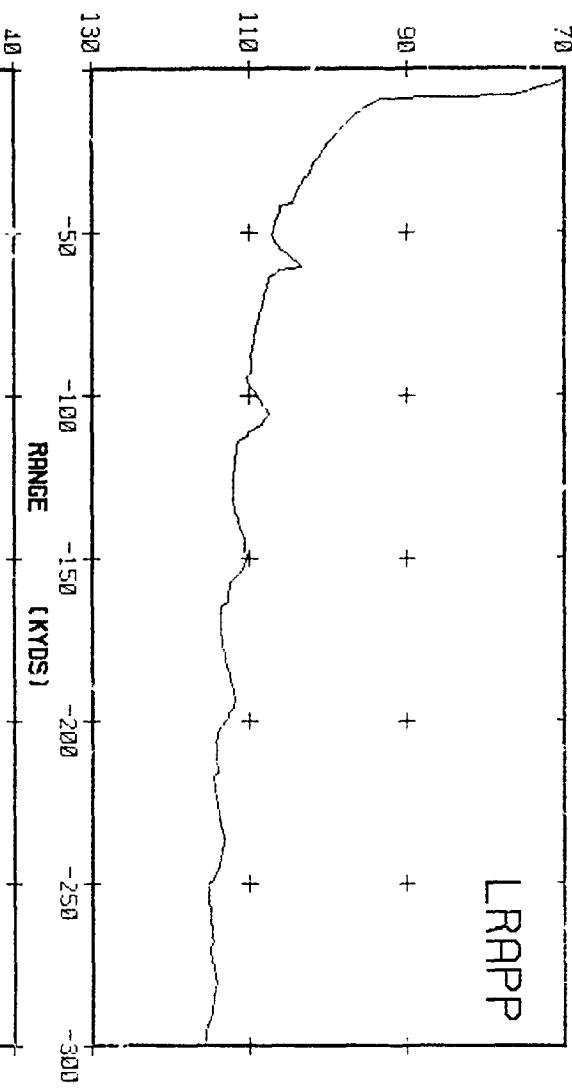
AREA 3B WINTER

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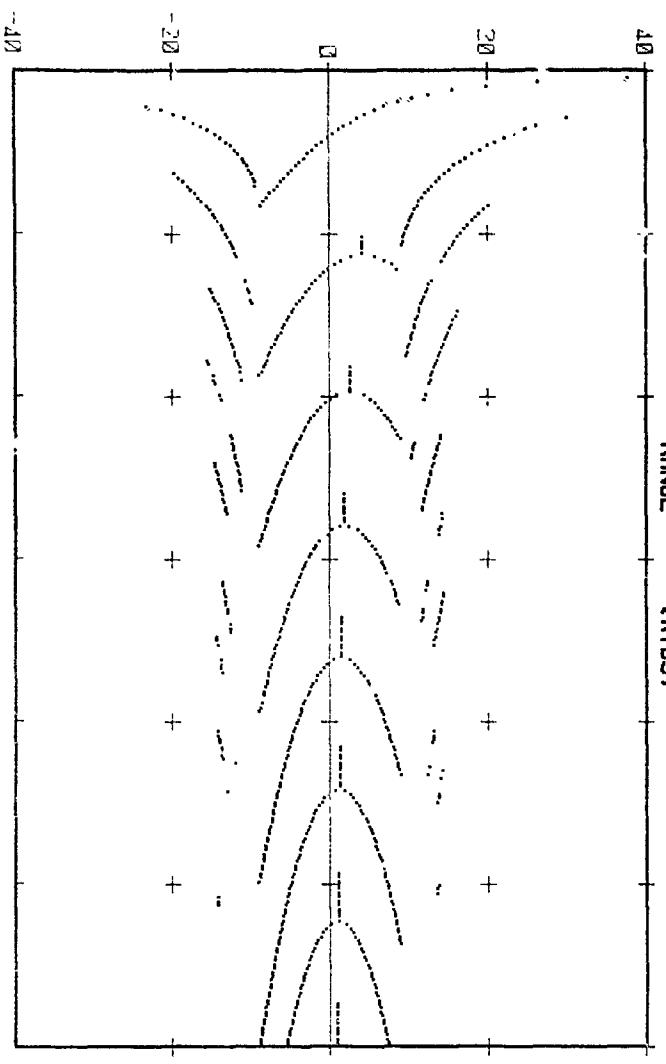
1450 M/S 1500 1550

LRAPP

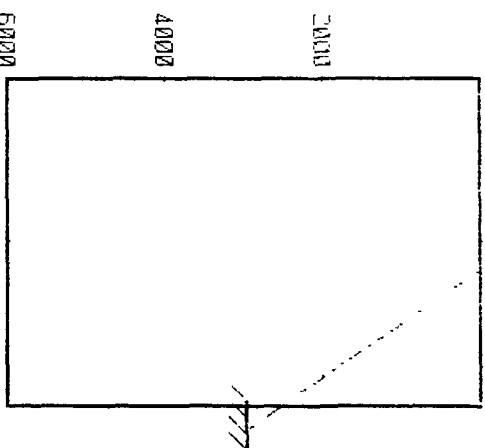
DB LOSS



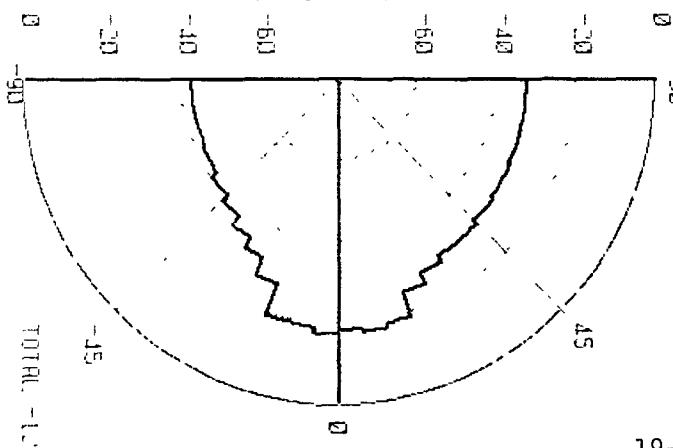
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



RIVER 38 WINTER

S 50 R 6003 F 10

1450 1150 1550

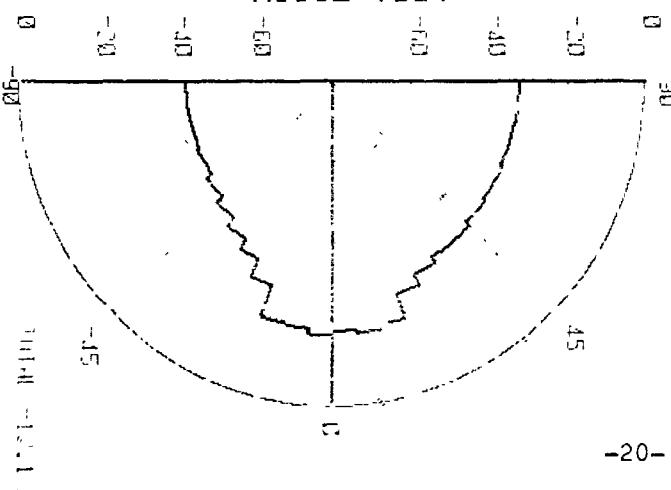
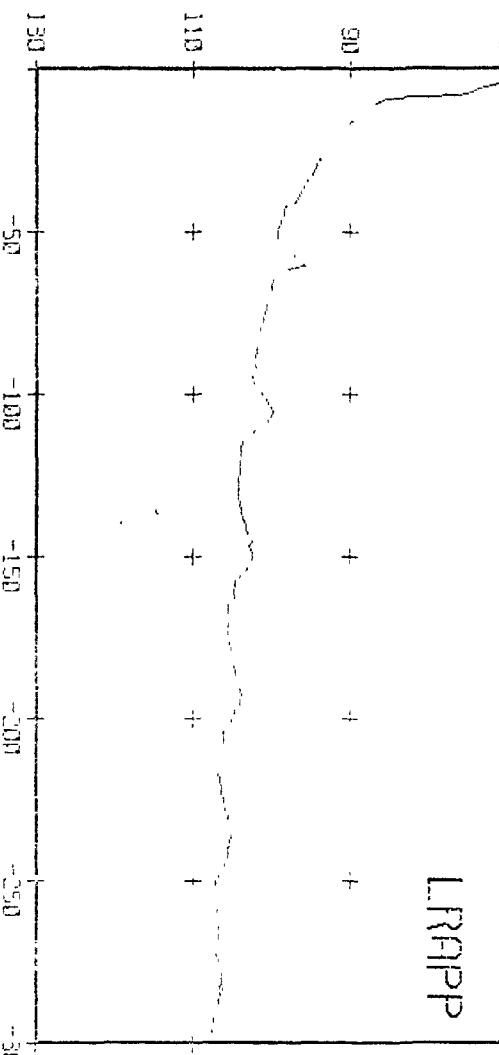
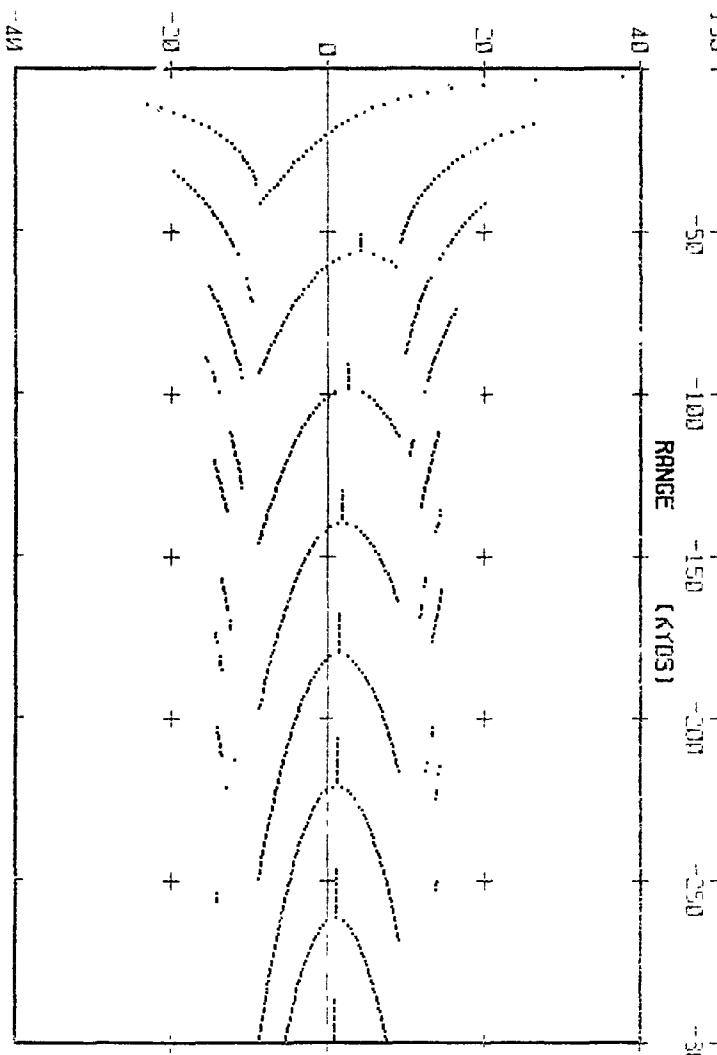
LREAPP

DB LOSS

DEPTH IN METERS

ARRIVAL ANGLE

NOISE (DB)



-20-

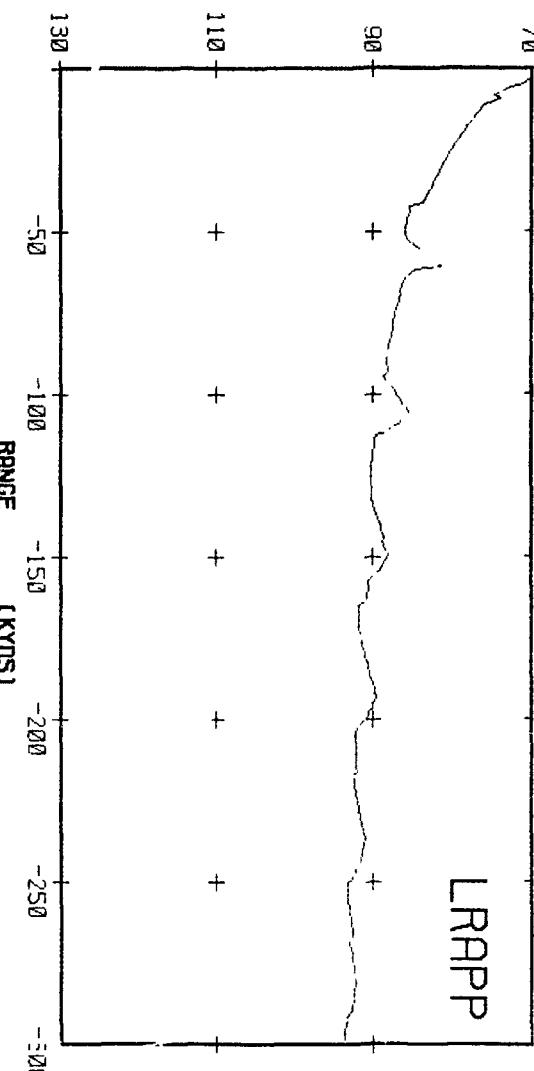
AREA 3B WINTER

S 300 R 6000 F 10

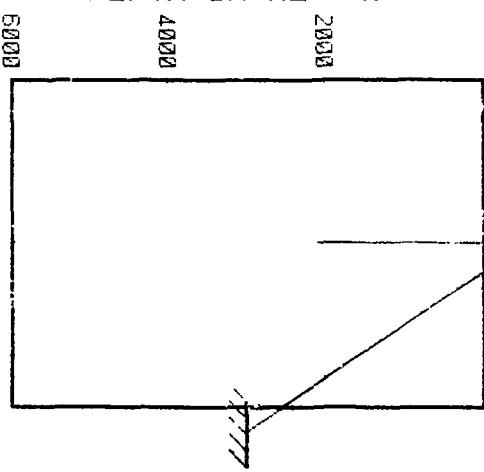
1450 11/5 1500
1550

L RAPP

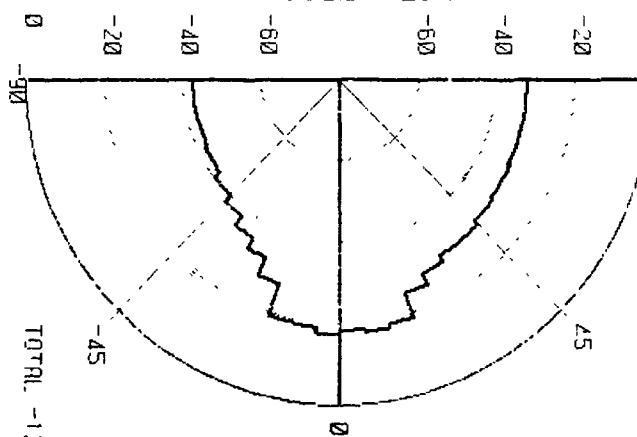
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -12.1 DS

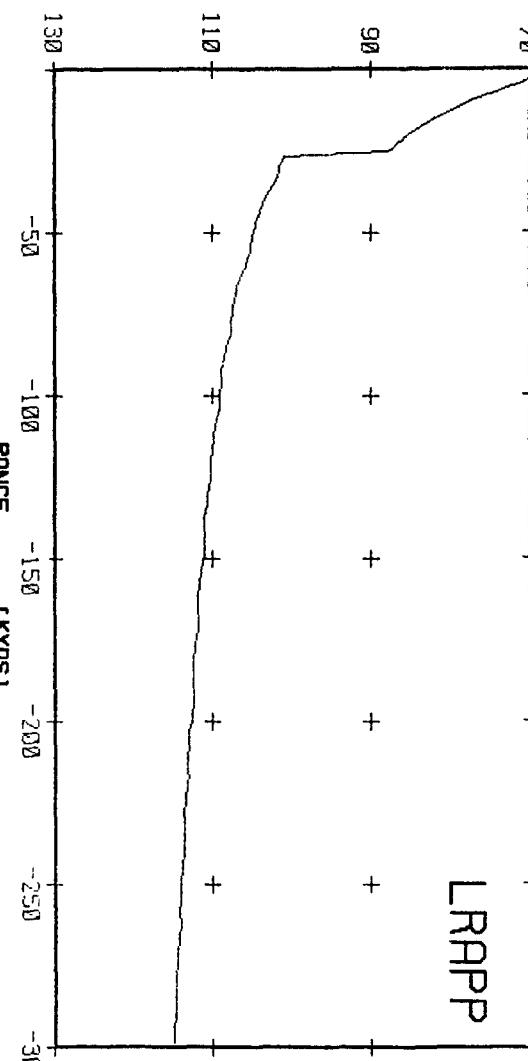
RER 3B WINTER

S 20 R 9842 F 10

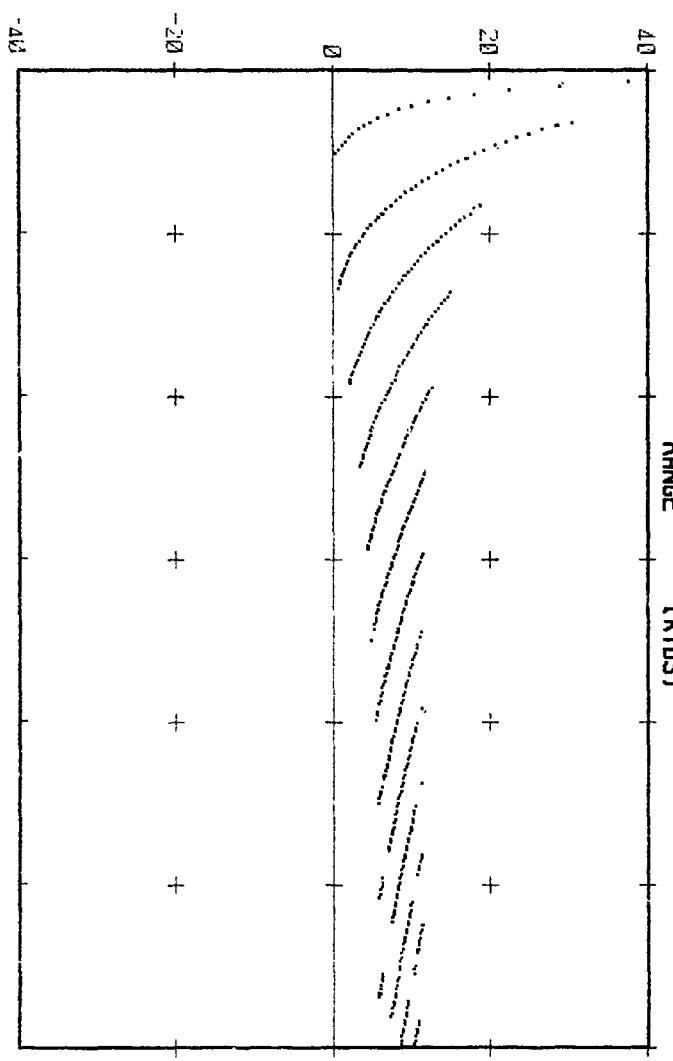
1450 M/S 1500 1550

LRAAPP

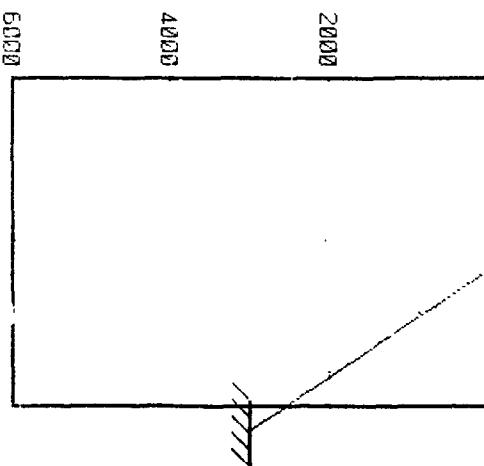
DB LOSS



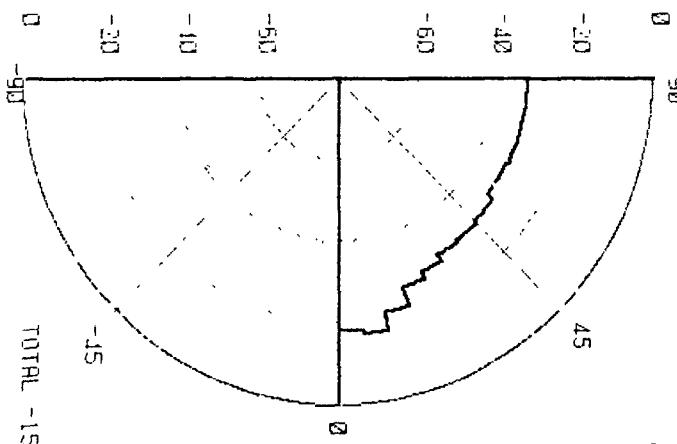
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



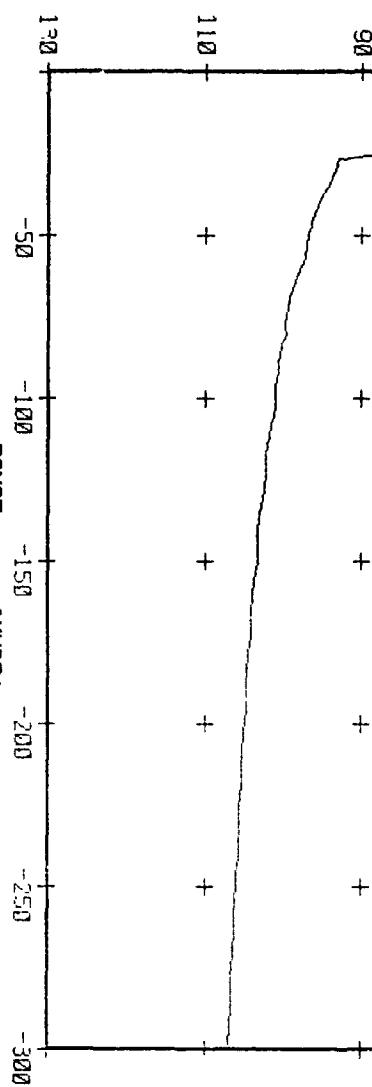
AREA 3B WINTER

S 50 R 9842 F 10

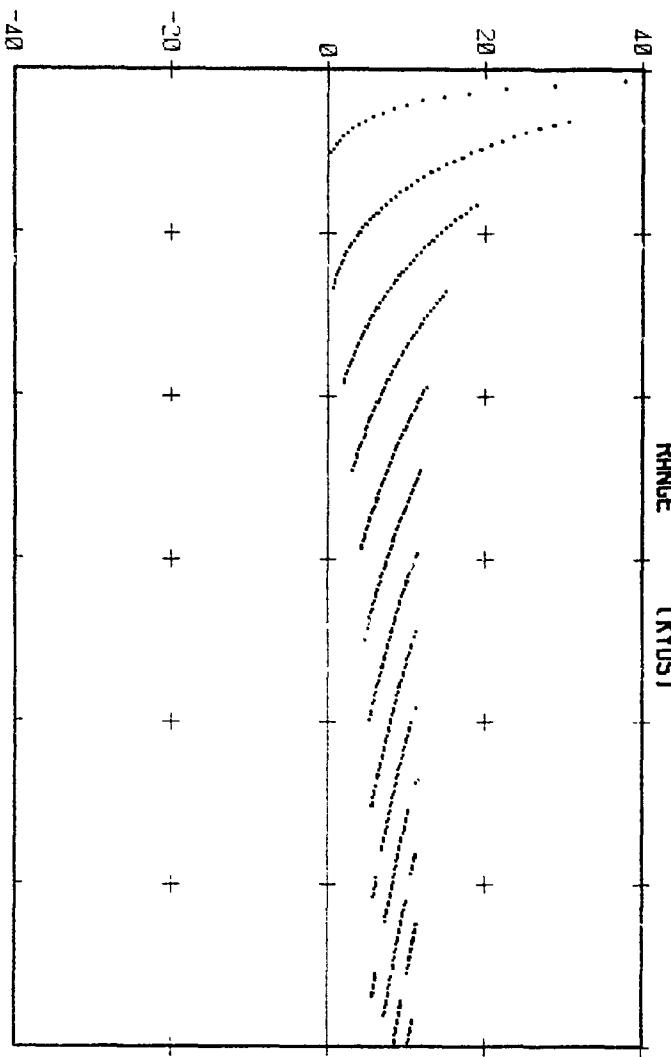
1450 M/S 1500 1550

L RAPP

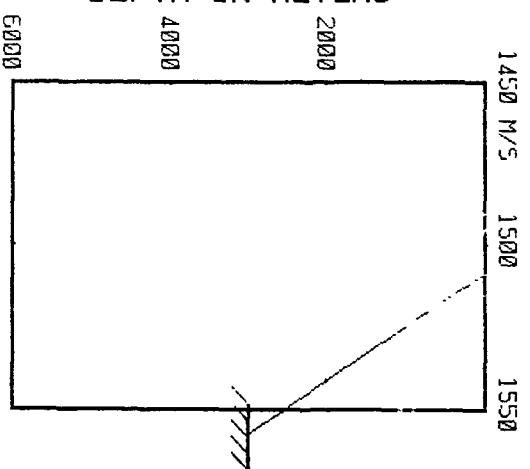
DB LOSS



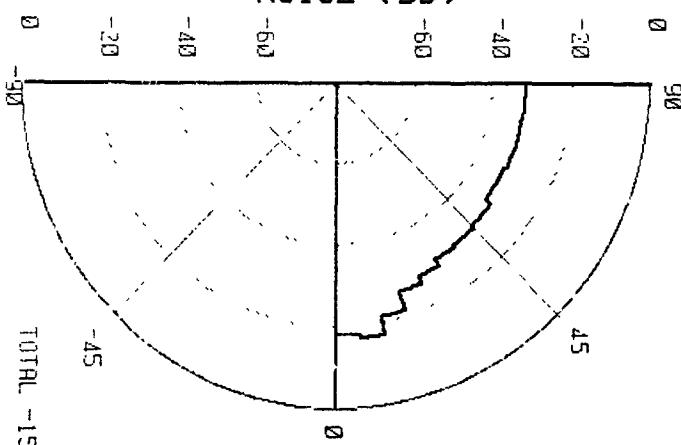
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



AREA 3B WINTER

S 33° R 9342 F 18

1451 H. 1531

LRRPP

DB LOSS

130
110
90
70
50
30
10

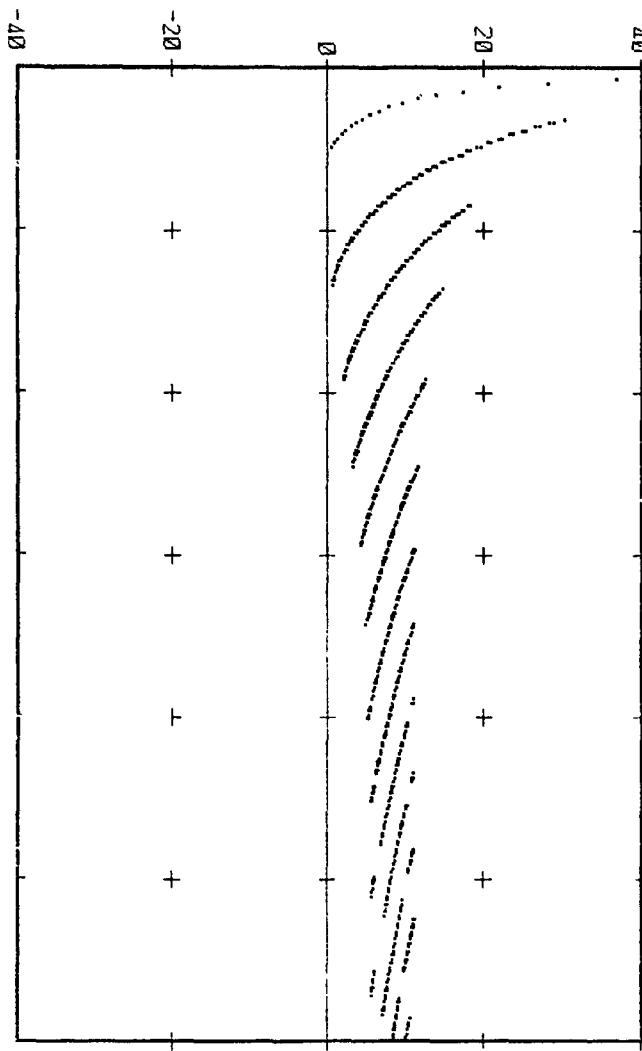
-100 -150 -200 -250 -300

0 5000 4000 3000 2000 1000

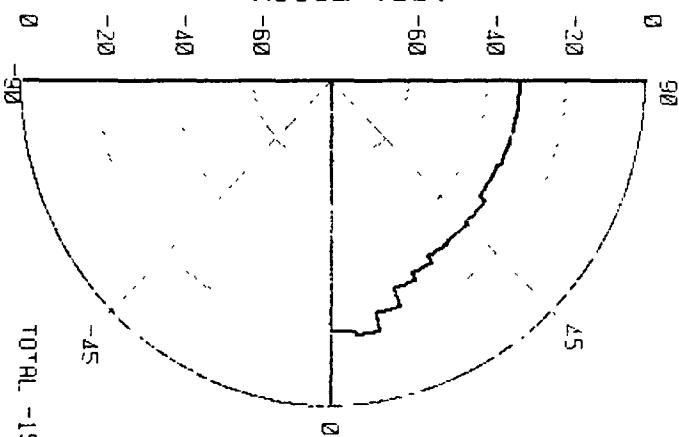
DEPTH IN METERS

-24-

ARRIVAL ANGLE



NOISE (DB)

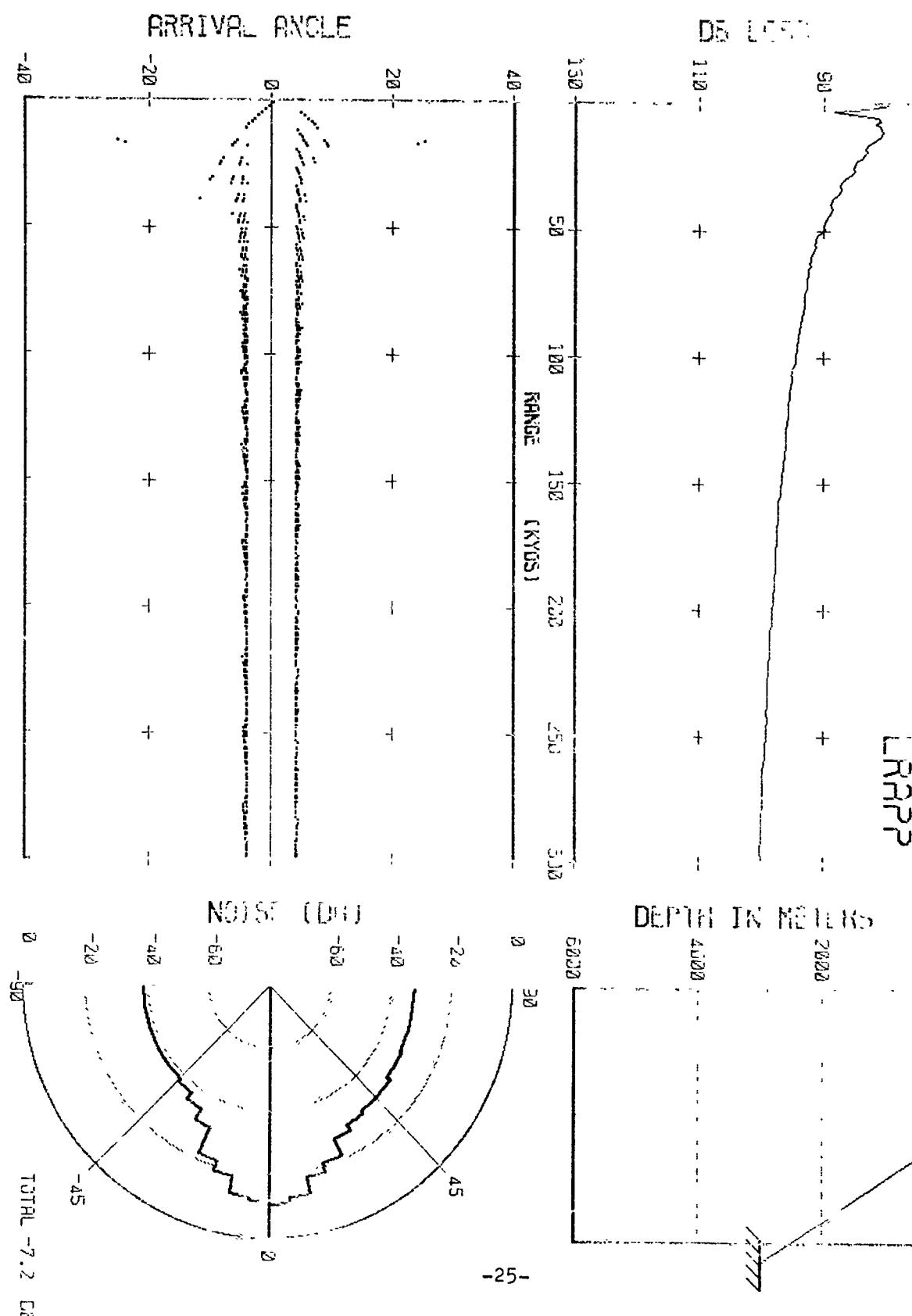


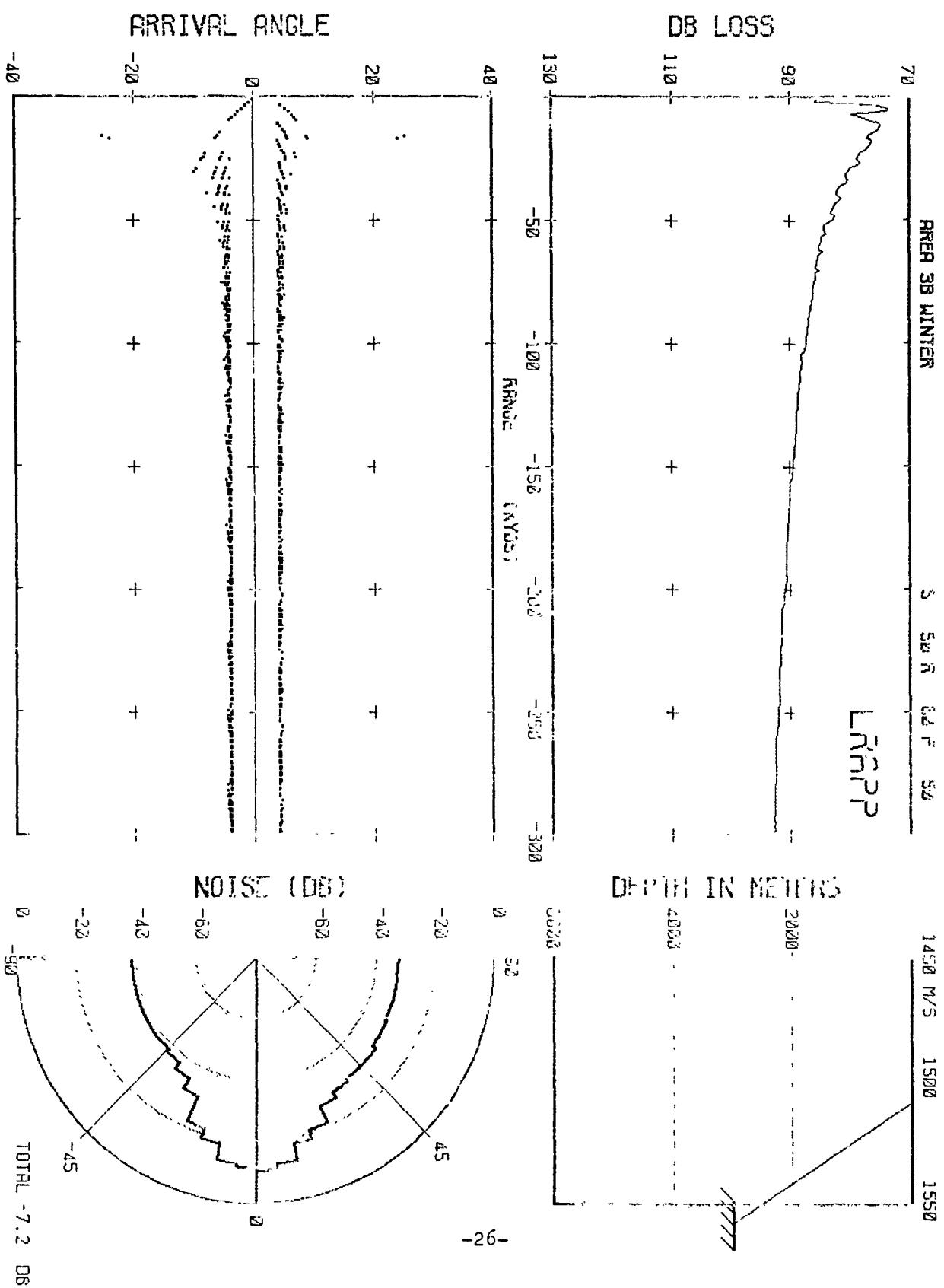
TOTAL -15.2 DB

AREA 3B WINTER

卷之三

1450 M/S 1500 1550





70

AREA 3B WINTER

S 300 R 60 F 50

1450 M/S

1500

1550

DB LOSS

90

+

80

+

70

+

60

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50

+

40

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30

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20

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10

+

0

ARRIVAL ANGLE

130

110

90

70

50

30

10

0

-10

-30

-50

-70

-90

-110

-130

-150

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-190

-210

-230

-250

-270

-290

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-320

-330

-340

-350

-360

-370

-380

-390

-400

-410

-420

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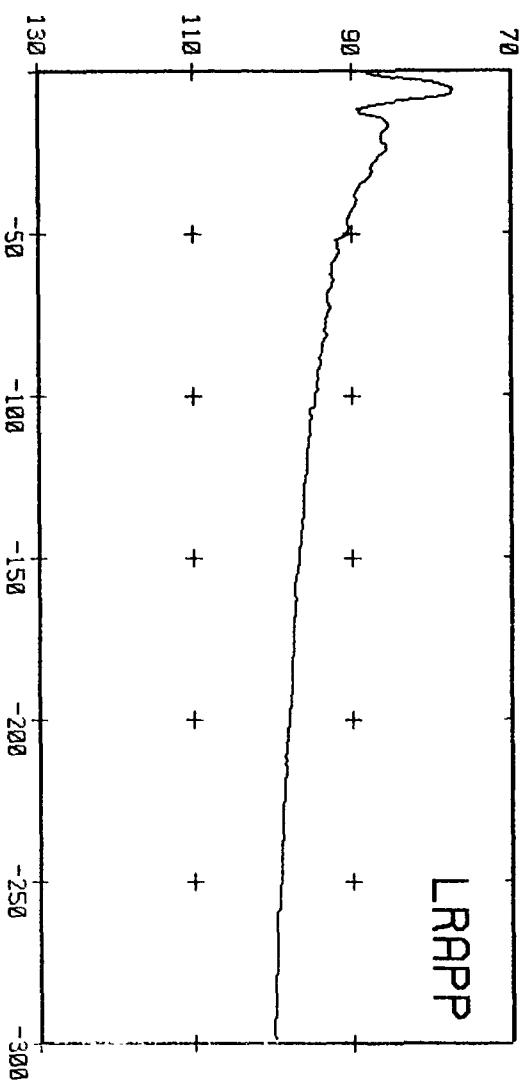
ARR 3B WINTER

S 20 R 100 F 50

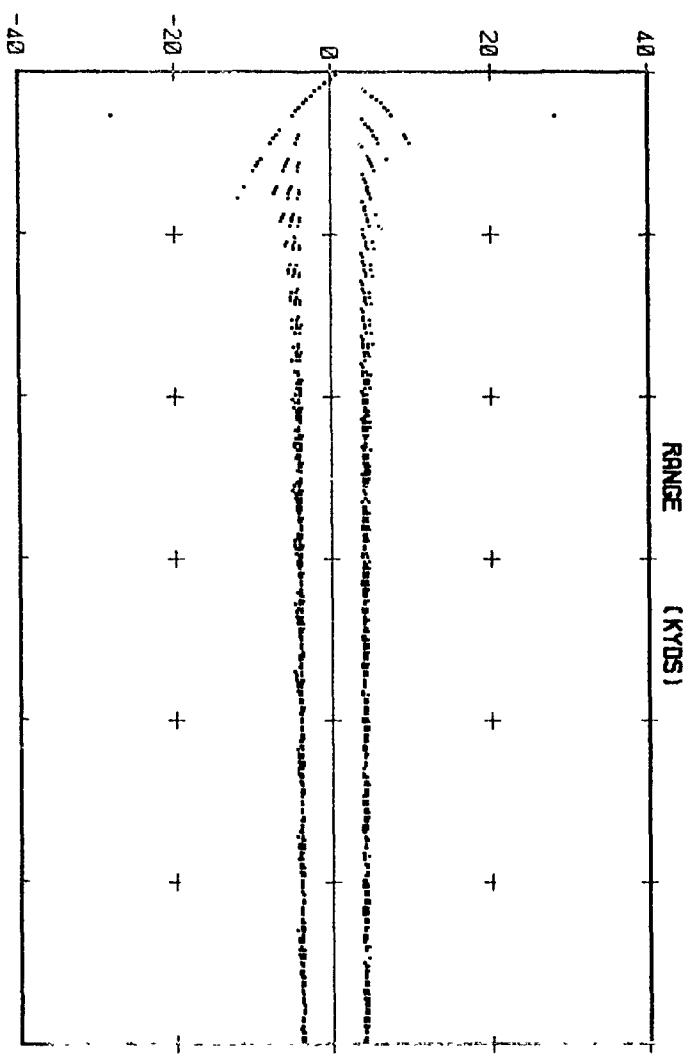
1450 M/S 1500 1550

LRAAPP

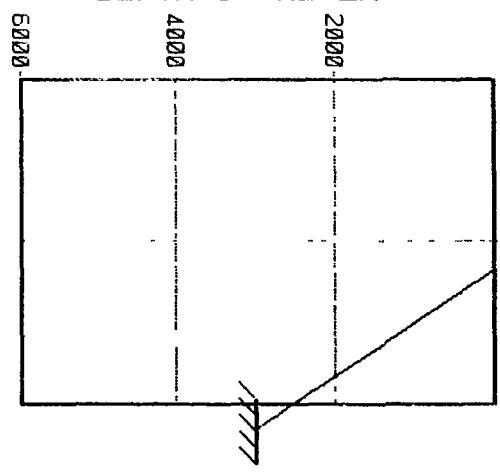
DB LOSS



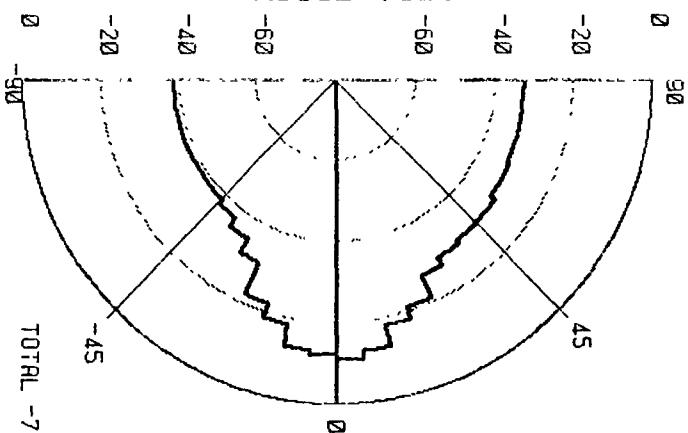
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -7.4 DE

70

RER 3B WINTER

S 50 R 100 F 50

1450 M/S 1500 1550

90

+ + + + + + + + + +

2000

4000

6000

DB LOSS

110

+ + + + + + + + + +

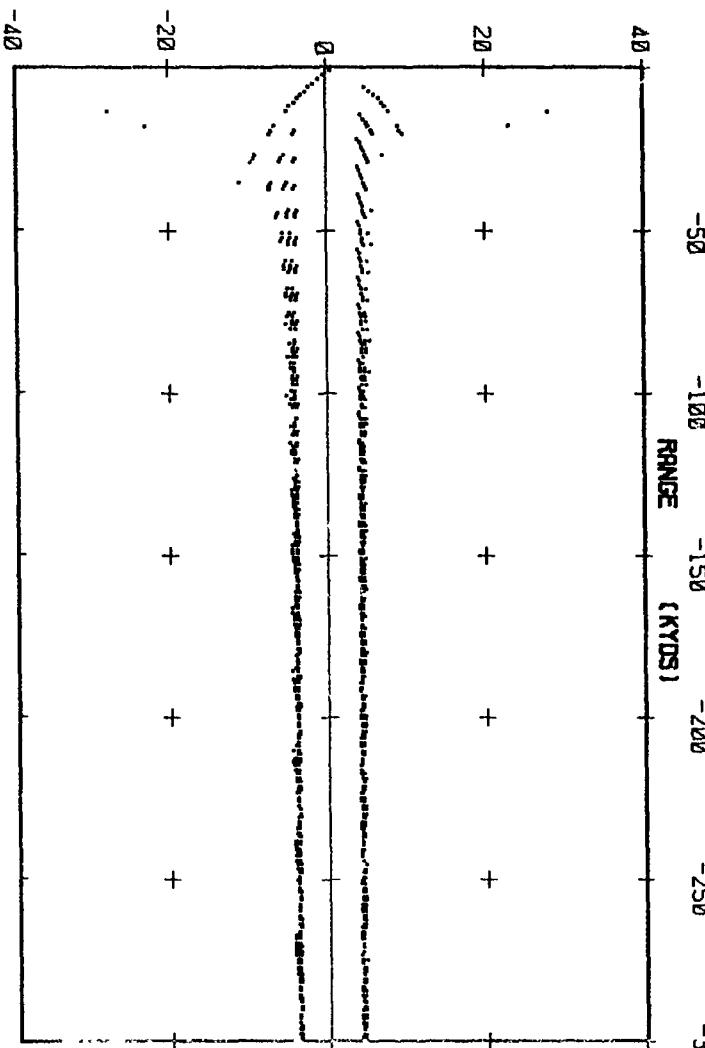
2000

4000

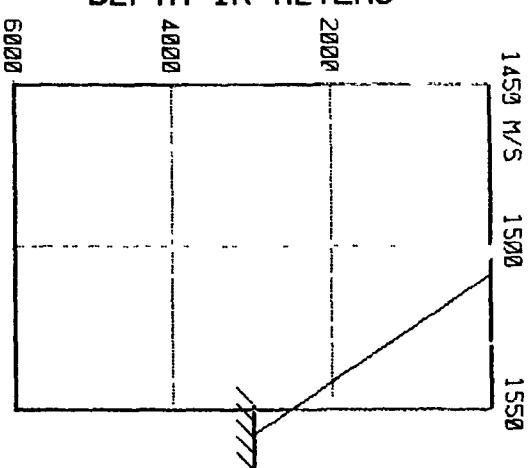
6000

LRAPP

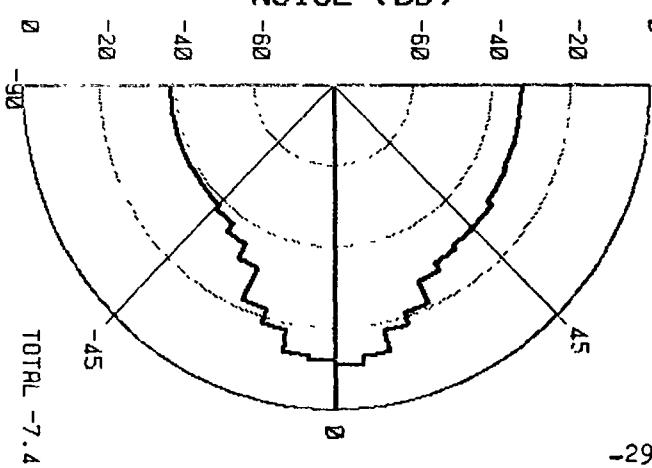
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

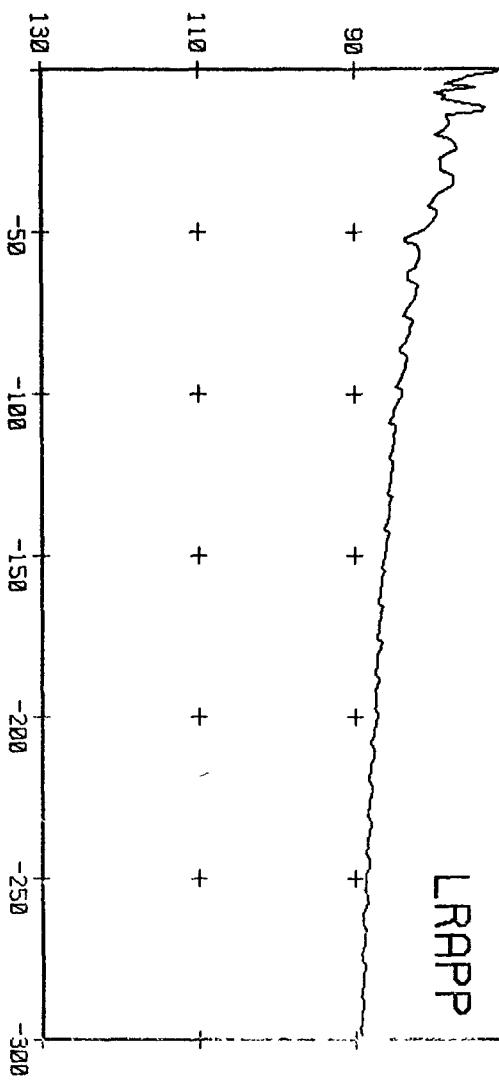


AREA 38 WINTER

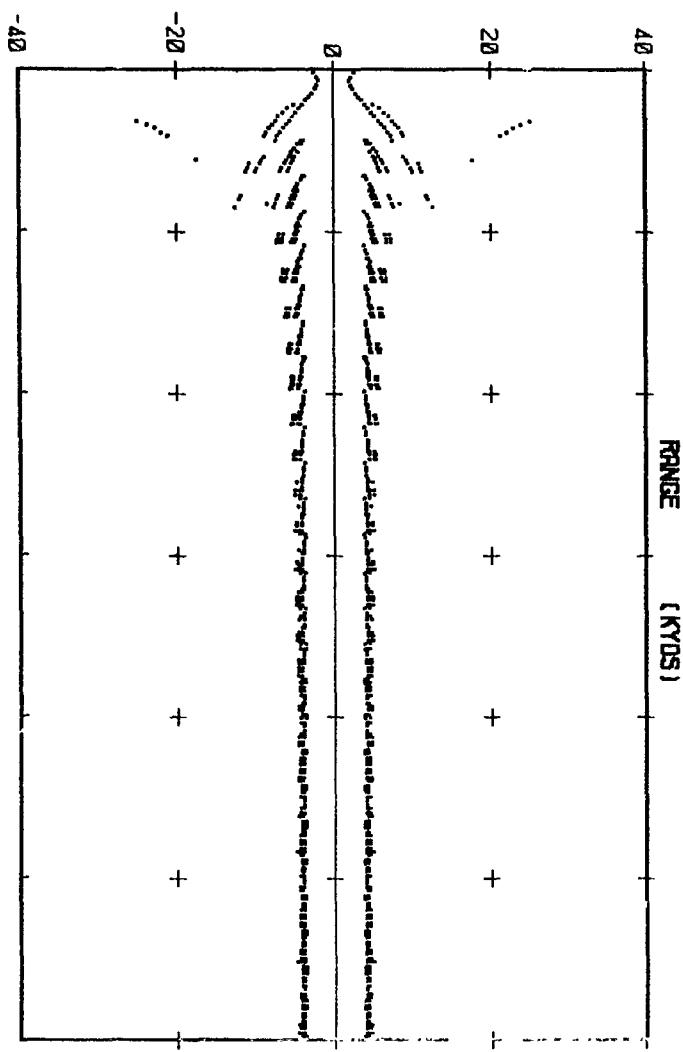
S 300 R 100 F 50

1450 M/S 1500 1550

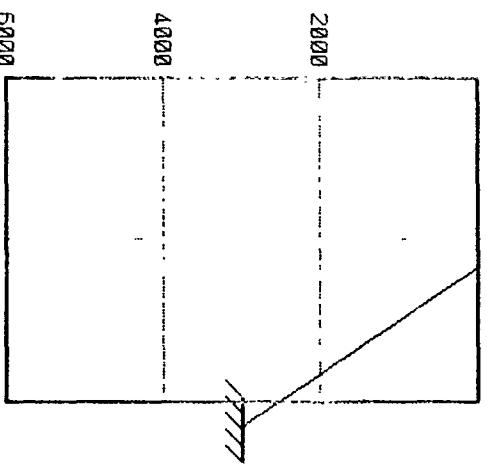
DB LOSS



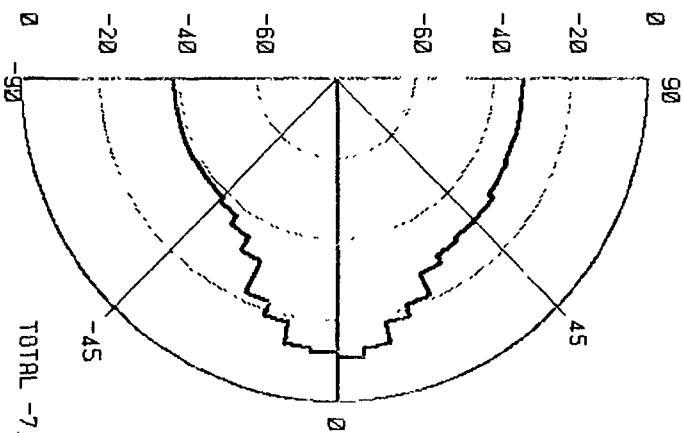
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



-30-

70

RIVER 3B WINTER

S 20 R 300 F 50

1450 M/S 1500 1550

LRAPP

DB LOSS

90

110

130

150

170

190

210

230

250

270

290

310

330

350

370

390

410

430

450

470

490

510

530

550

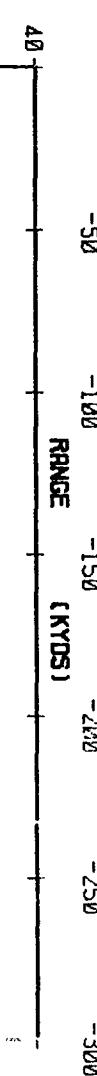
570

590

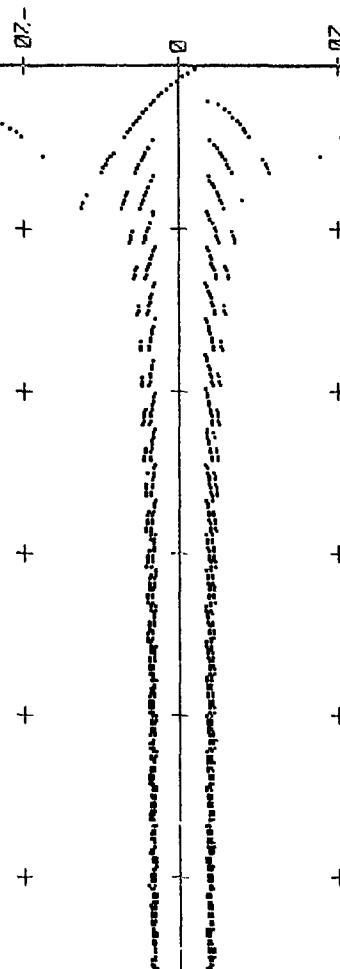
610

630

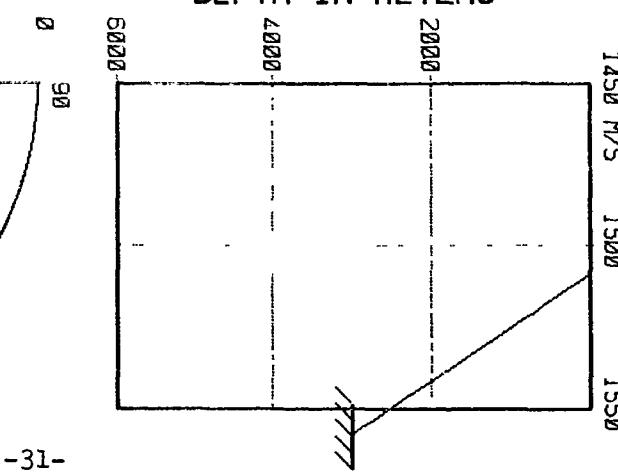
650



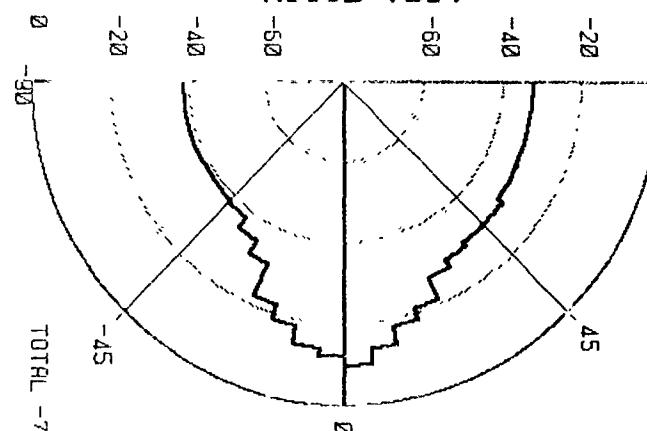
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL - 7.5 DB

RIVER 3B WINTER

S 5A R 303 F 5d

1450 M/S 153W 1550

LRAPP

DB LOSS

90

110

130

-50

-100

-150

-200

-250

-300

0

40000

20000

0

DEPTH IN METERS

0

50000

0

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70

AREA 3B WINTER

S 300 R 300 F 54

1450 M/S

1540

1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

+

+

+

130
110
40
-50
-100
-150
-200
-250
-300

RANGE (KILOS)

0
30
60
90

DEPTH IN METERS

4000

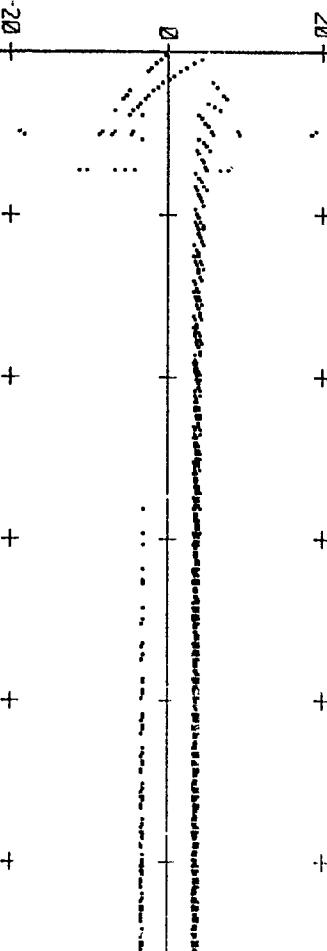
30

20

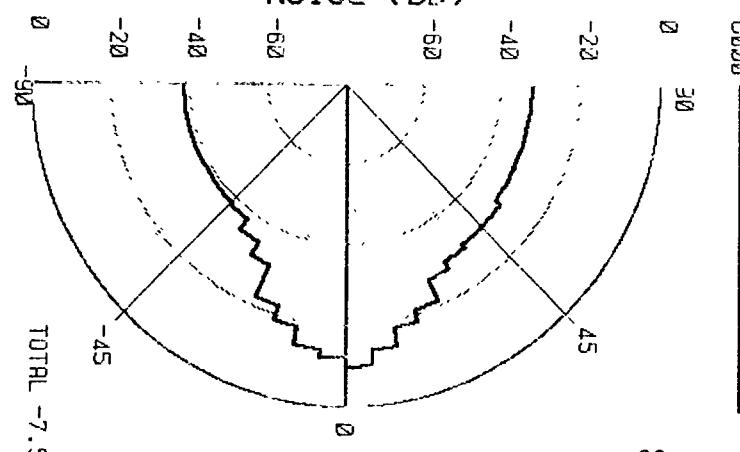
10

0

ARRIVAL ANGLE



NOISE (DB)



-33-

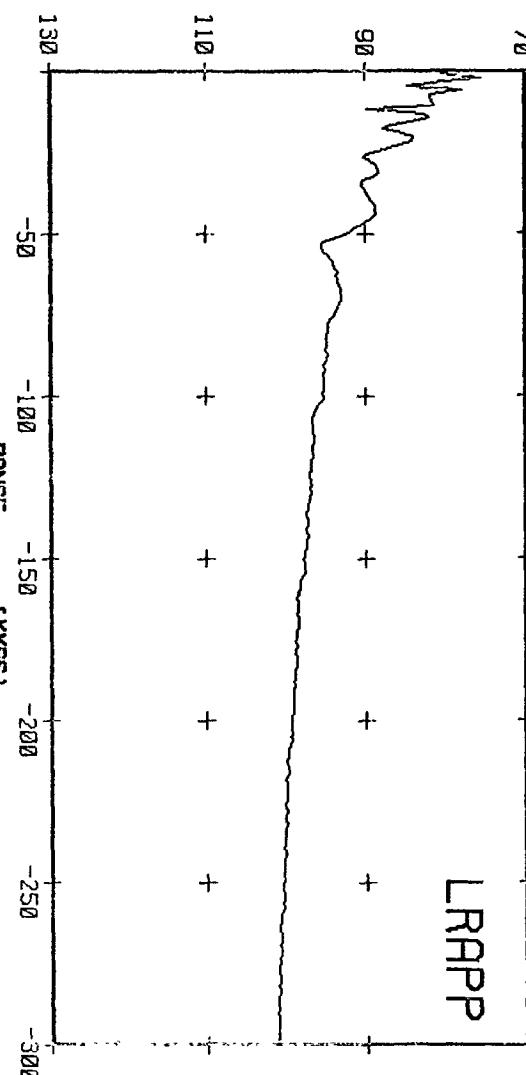
70

AREA 3B WINTER

S 20 R 500 F 50

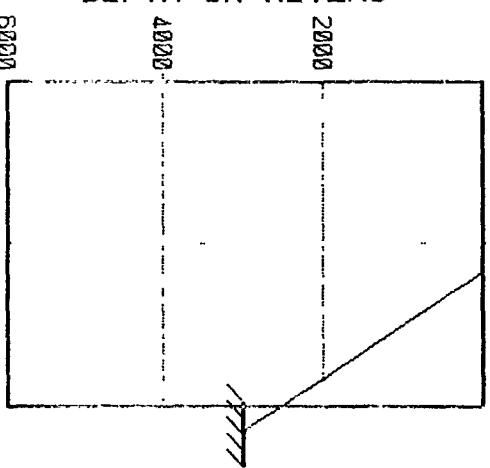
1450 M/S 1500 1550

DB LOSS

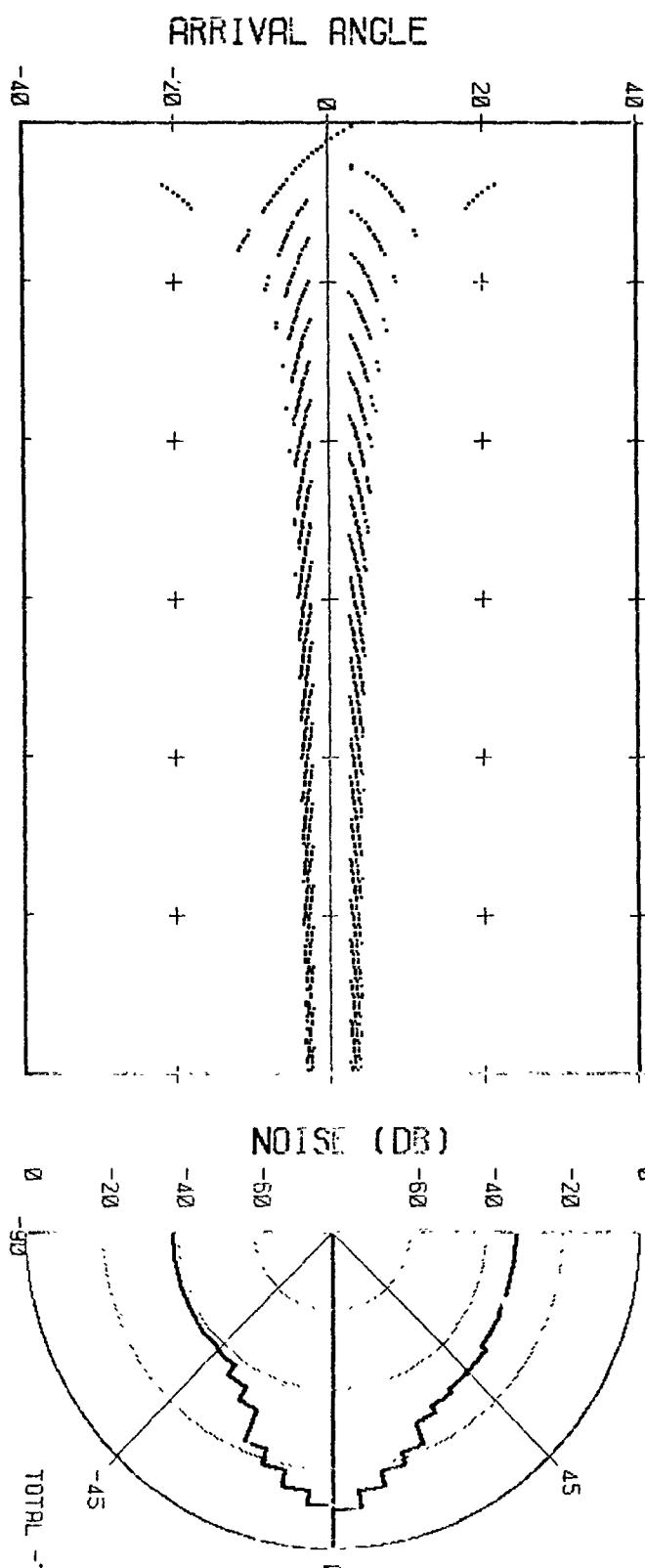


LRAPP

DEPTH IN METERS



NOISE (DB)



TOTAL -7.3 DB

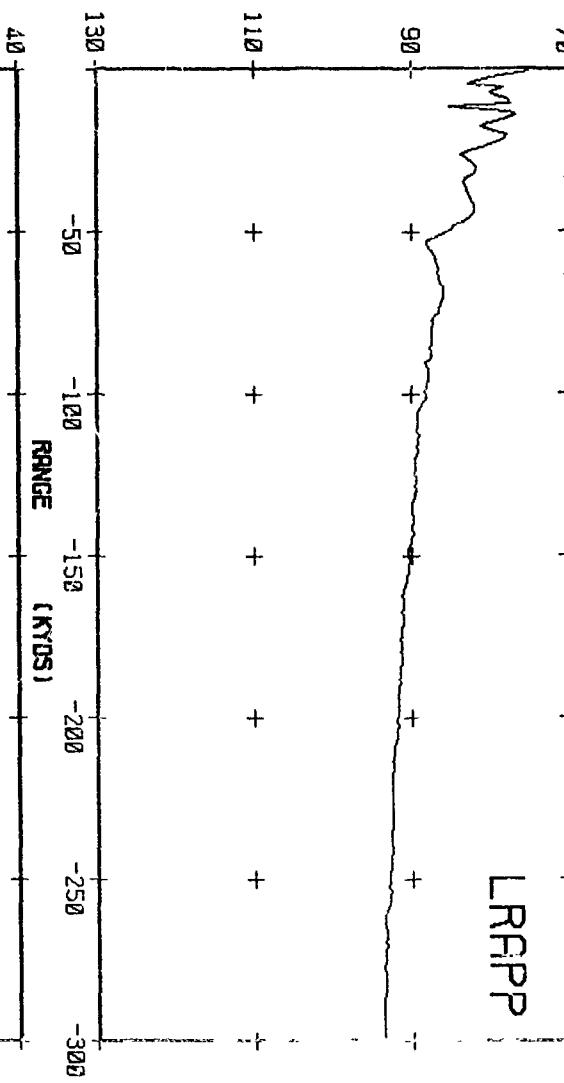
AREA 3B WINTER

S 52 R 500 F 50

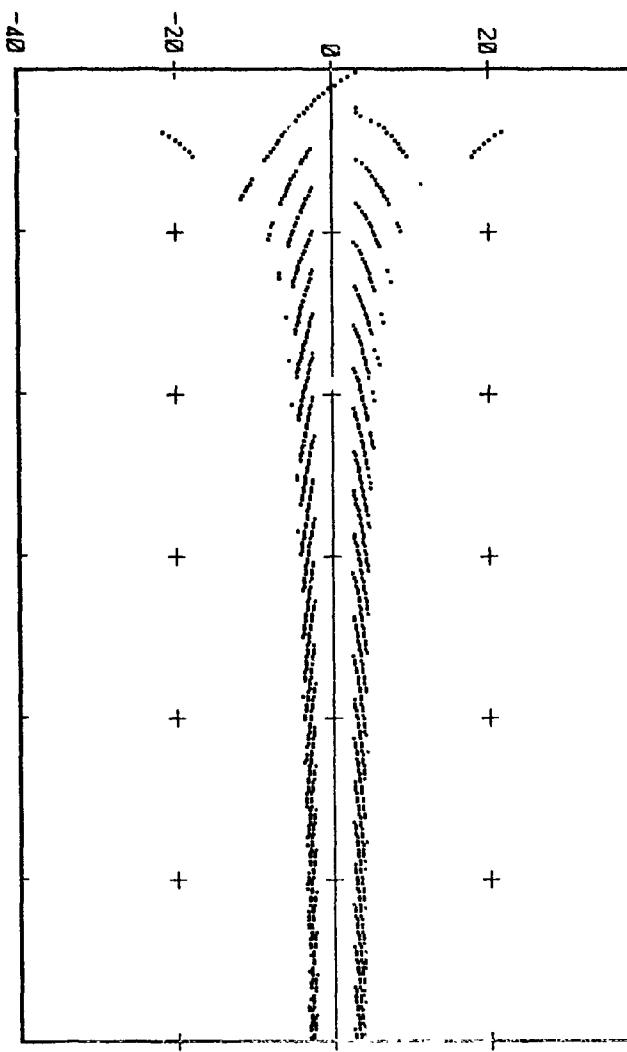
1450 M/S 1500 1550

LRAPP

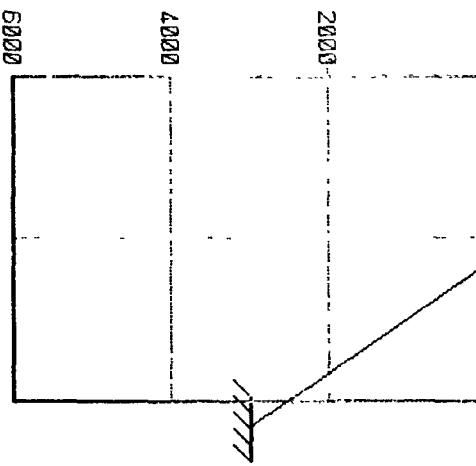
DB LOSS



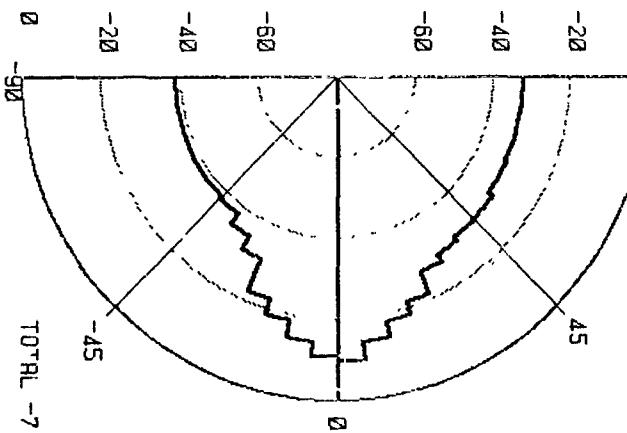
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



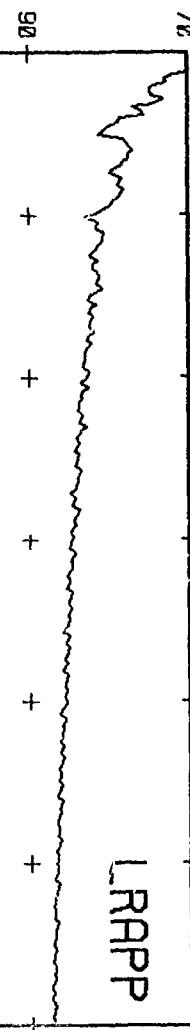
RER 3B WINTER

S 300 R 500 F 50

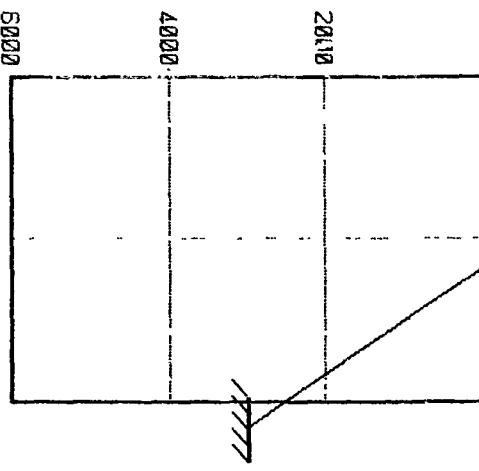
1450 M/S 1500 1550

L RAPP

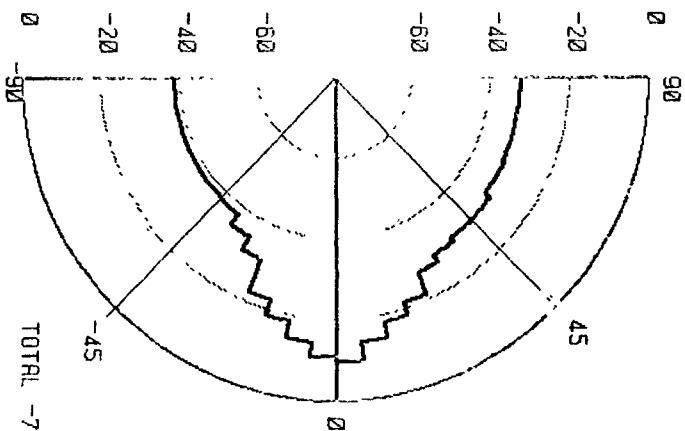
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -7.3 DB

PREC 3B WINTER

S 20 R 1000 F 50

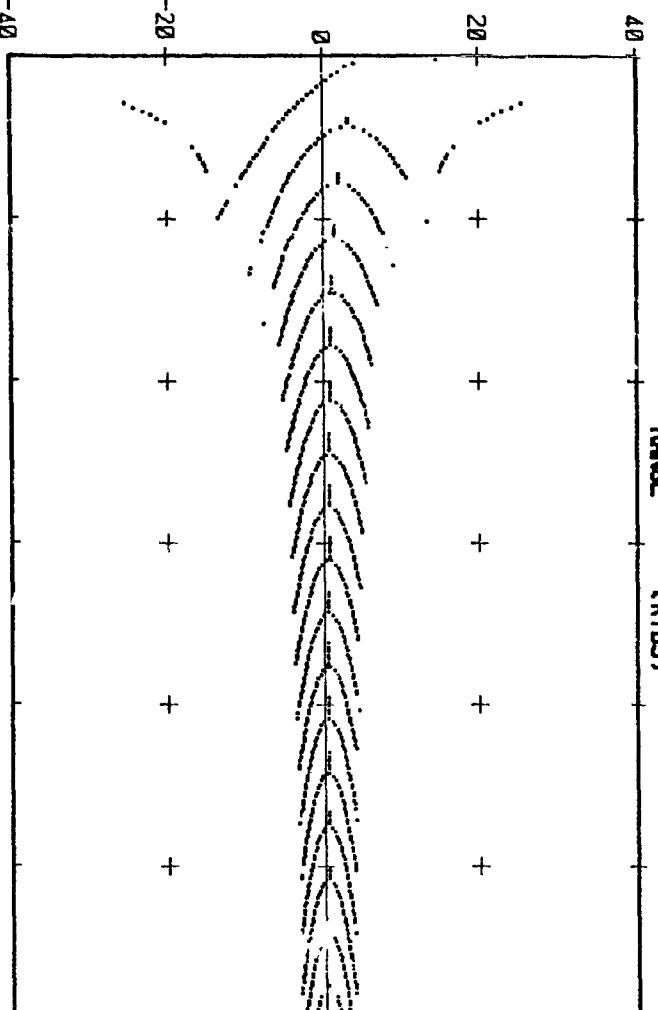
1450 M/S 1500 1550

LRAAPP

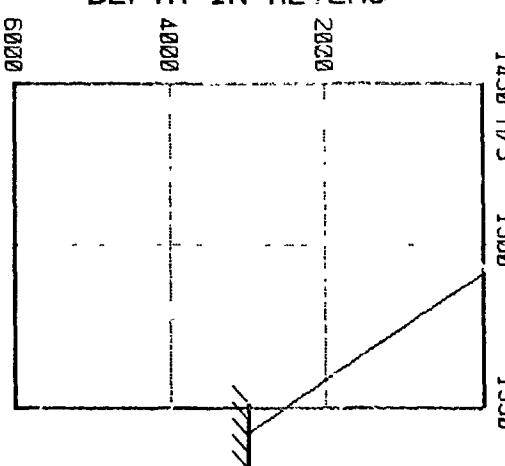
DB LOSS



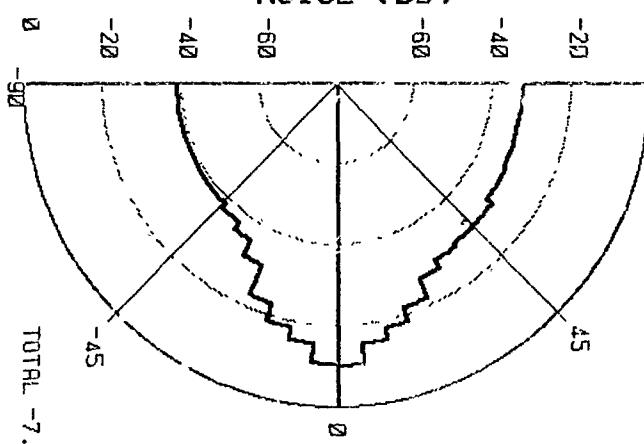
ARRIVAL ANGLE

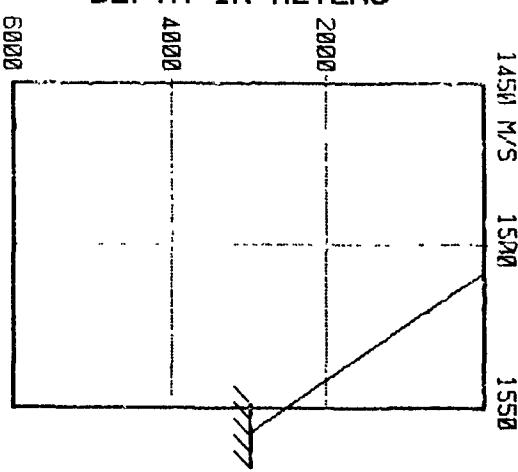
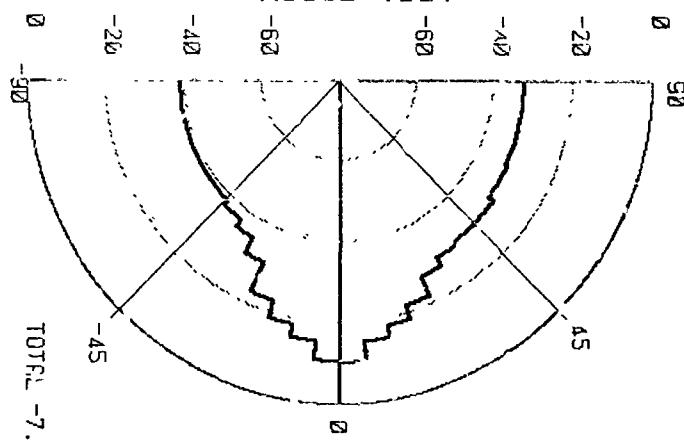
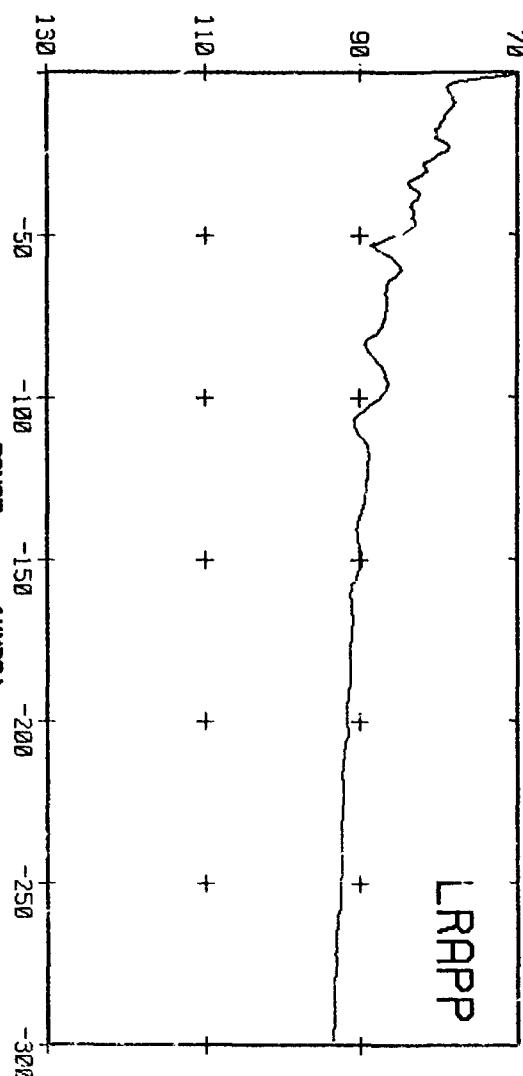
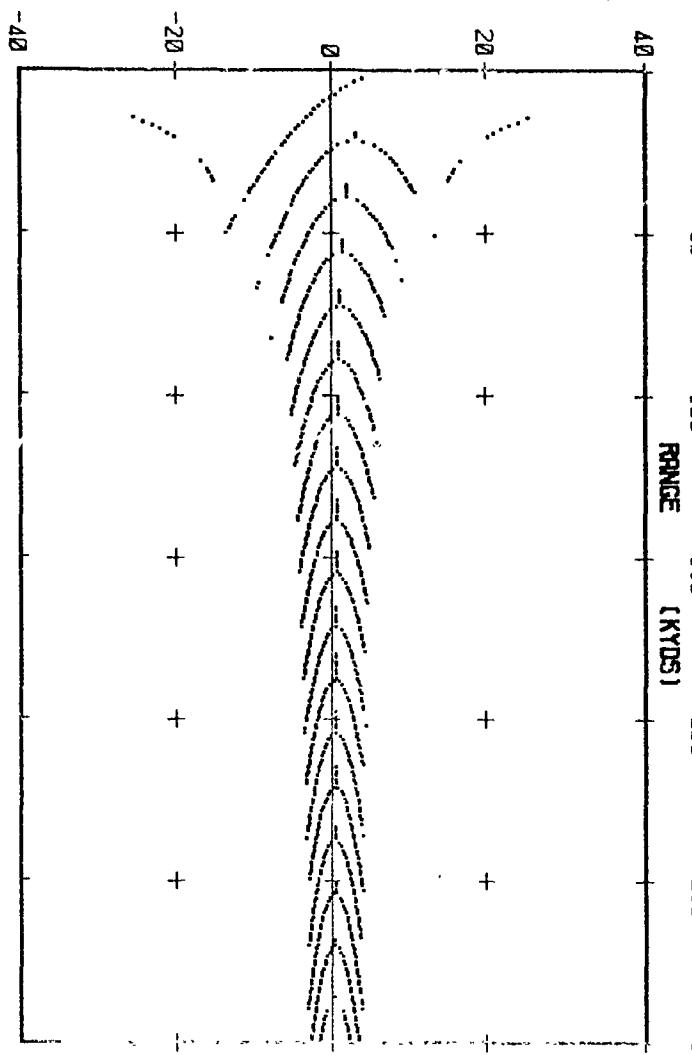


DEPTH IN METERS



NOISE (DB)



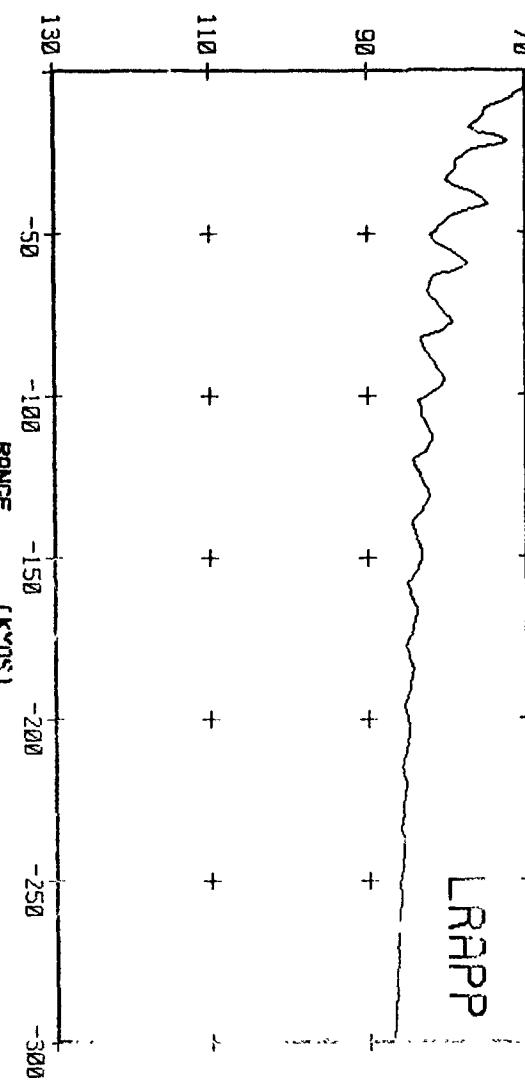


AREA 38 WINTER S 300 R 1000 F 50

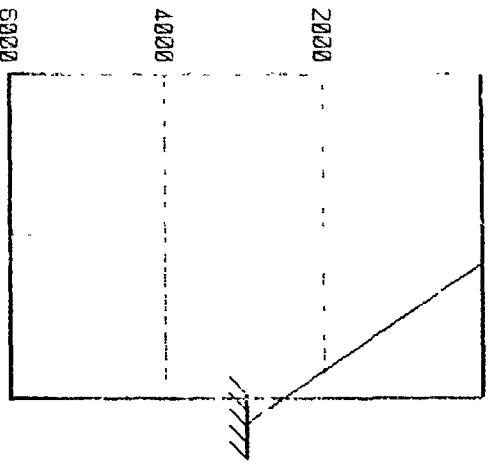
1450 14'S 1500 1550

LRAAPP

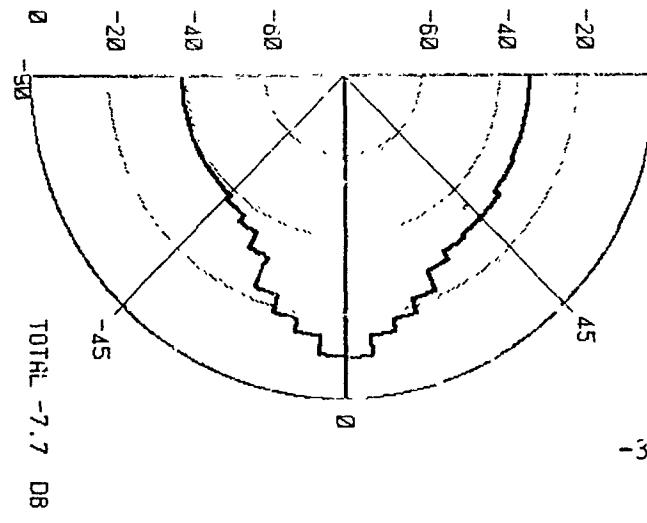
DB LOSS

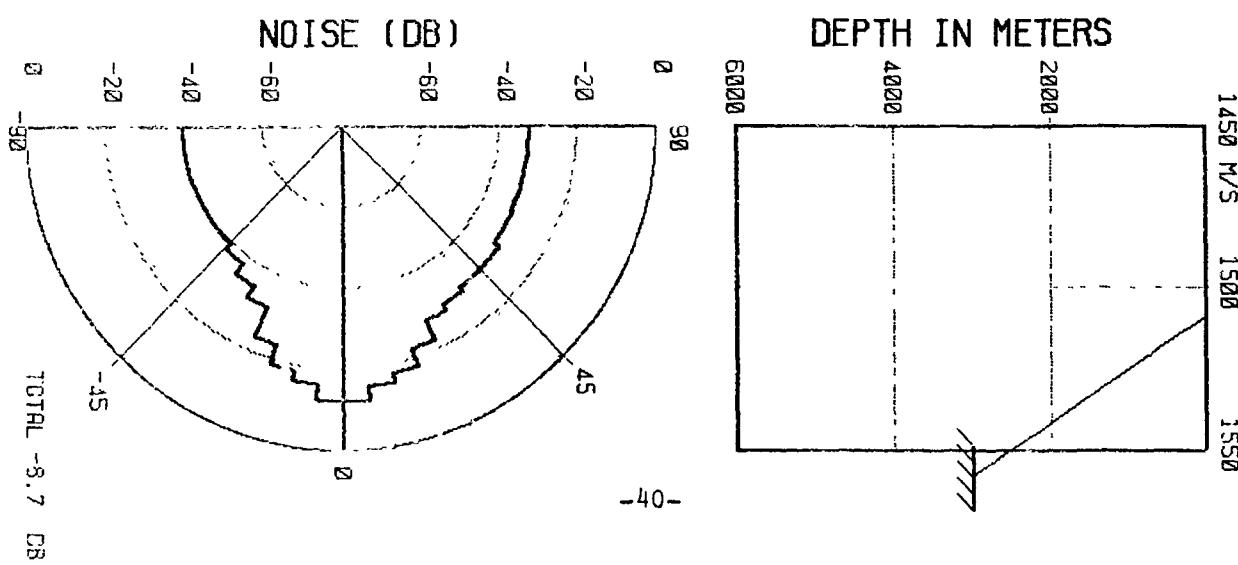
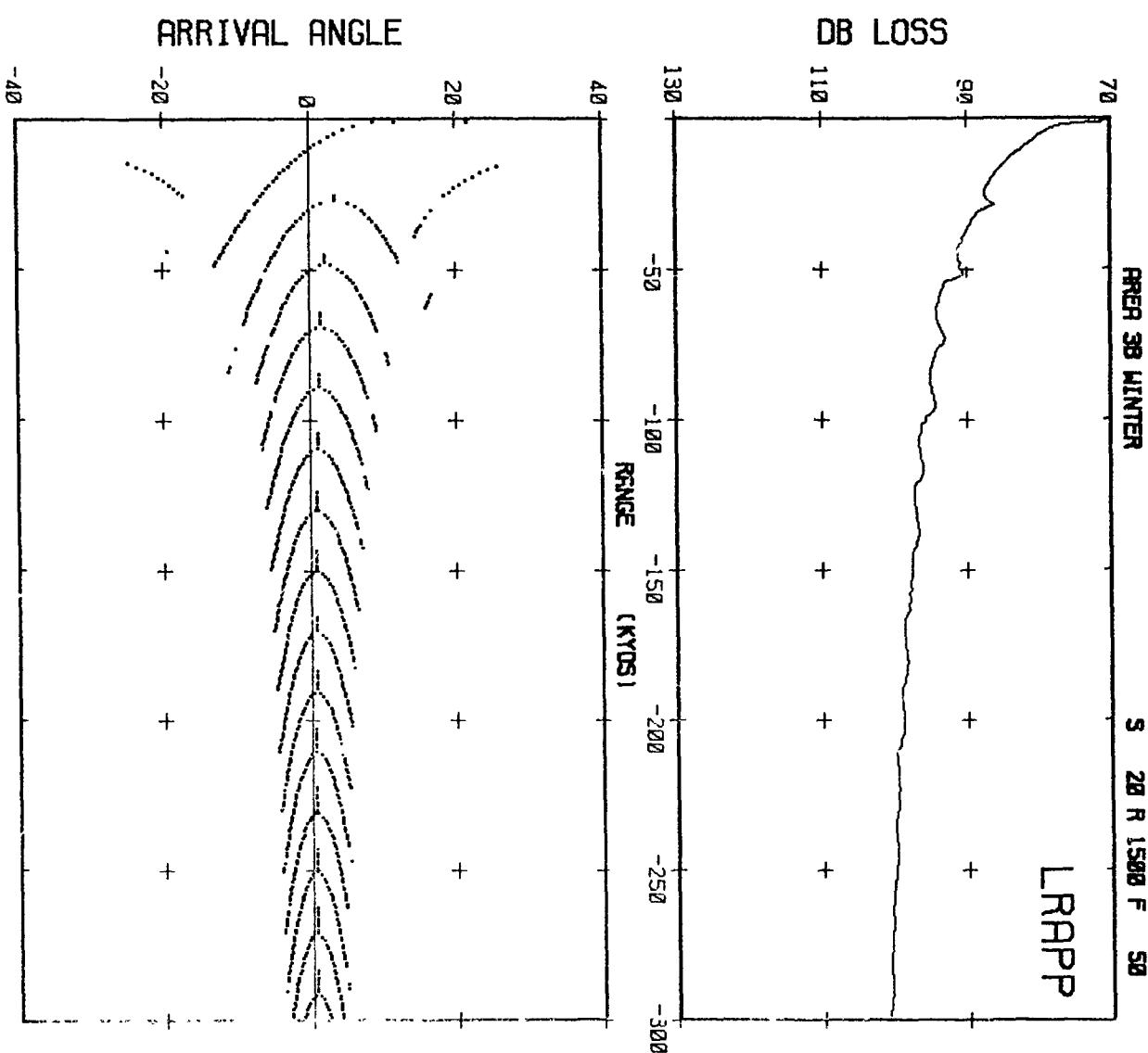


DEPTH IN METERS



NOISE (DB)





ARER 3B WINTER

S 50 R 1500 F 50

1450 M/S 1500 1550

L RAPP

DB LOSS

90

110

130

+

+

+

+

+

+

40

130

-50

-100

-150

-200

-250

-300

RANGE

(KMS)

ARRIVAL ANGLE

-20

20

B

+

+

+

+

+

+

DEPTH IN METERS

0

2000

4000

6000

8000

NOISE (DB)

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

-620

-640

-660

-680

-700

-720

-740

-760

-780

-800

-820

-840

-860

-880

-900

-920

-940

-960

-980

-1000

-1020

-1040

-1060

-1080

-1100

-1120

-1140

-1160

-1180

-1200

-1220

-1240

-1260

-1280

-1300

-1320

-1340

-1360

-1380

-1400

-1420

-1440

-1460

-1480

-1500

-1520

-1540

-1560

-1580

-1600

-1620

-1640

-1660

-1680

-1700

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-1840

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-1880

-1900

-1920

-1940

-1960

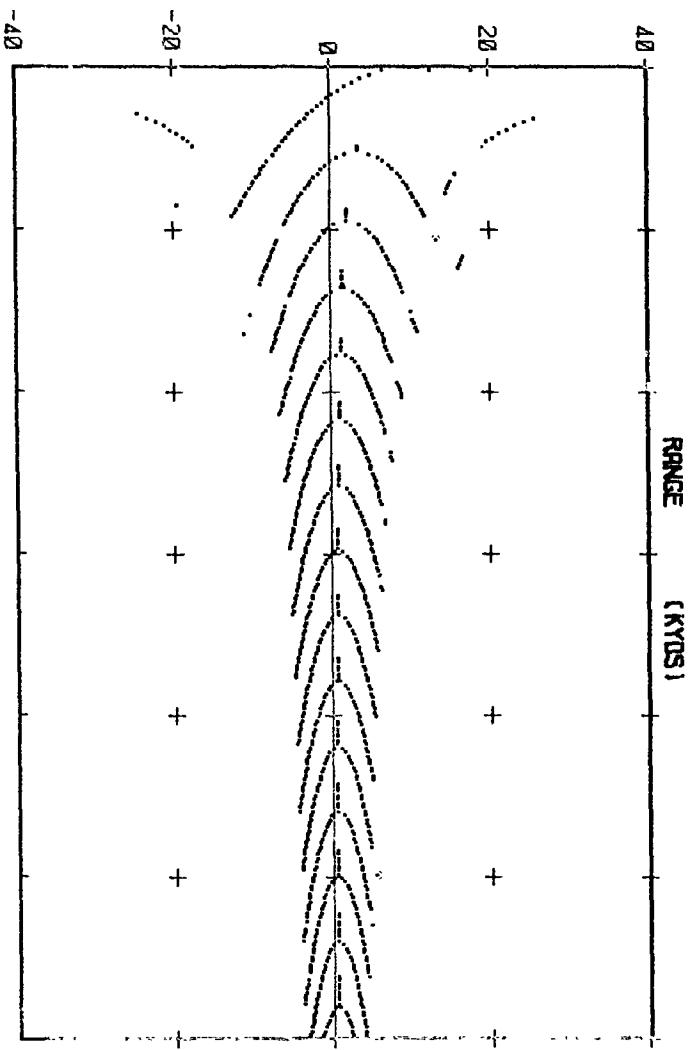
-1980

-2000

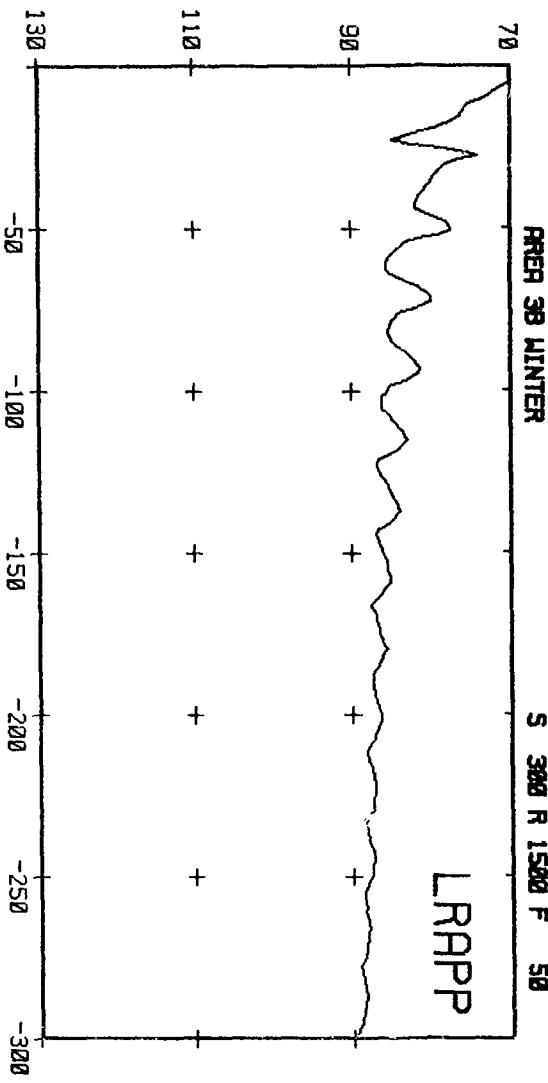
-41-

TOTAL -8.7 DR

ARRIVAL ANGLE



DB LOSS



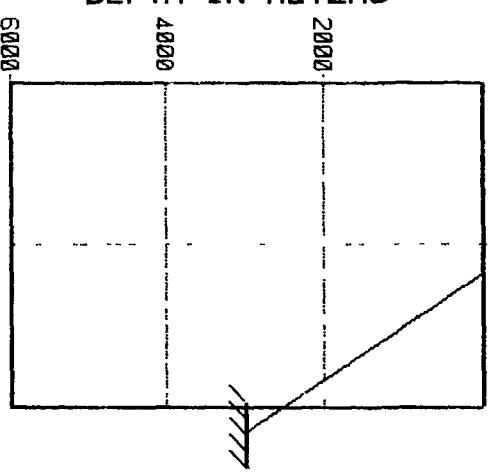
PRIER 3B WINTER

S 300 R 1500 F 50

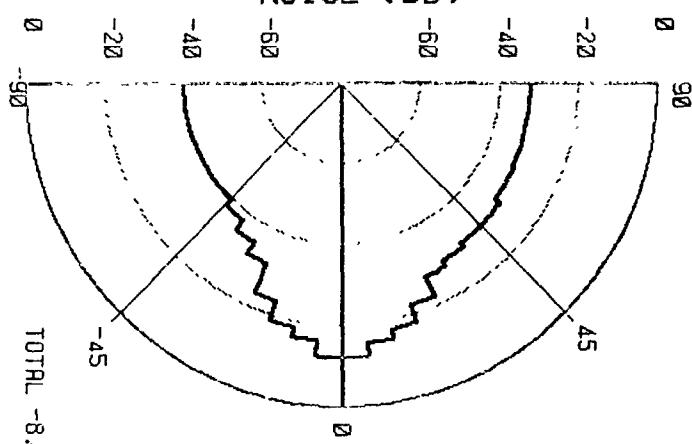
L RAPP

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)



TOTAL -8.7 DB

70

AREA 3B WINTER

S 20 R 6000 F 50

1450 M/S

1500

1550

LRAPP

DB LOSS

90

110

+

+

+

+

+

+

+

+

+

+

+

+

+

+

DEPTH IN METERS

0

2000

4000

6000

8000

10000

12000

14000

16000

18000

20000

22000

24000

26000

28000

30000

32000

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36000

38000

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42000

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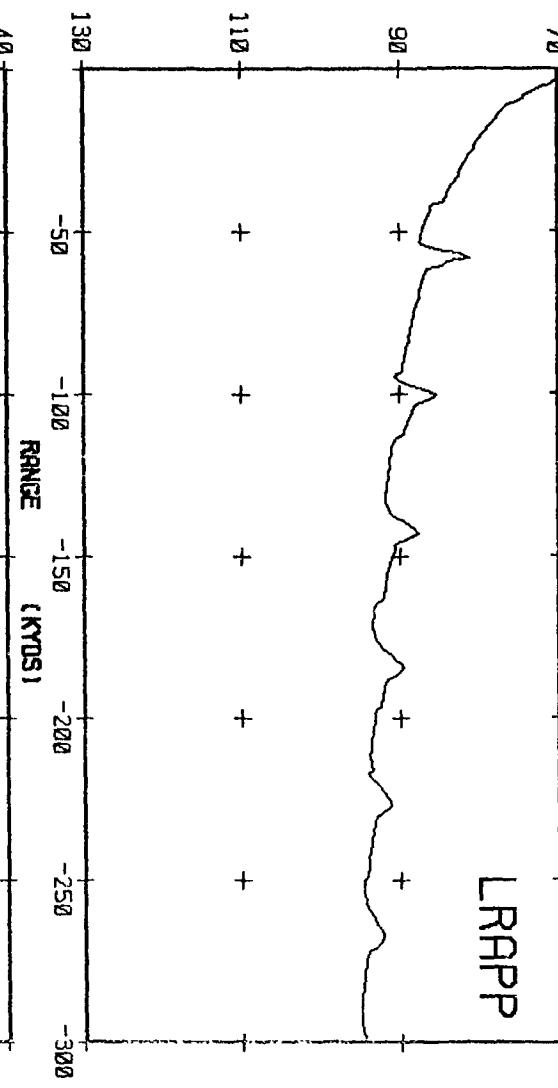
AREA 38 WINTER

S 50 R 6000 F 5W

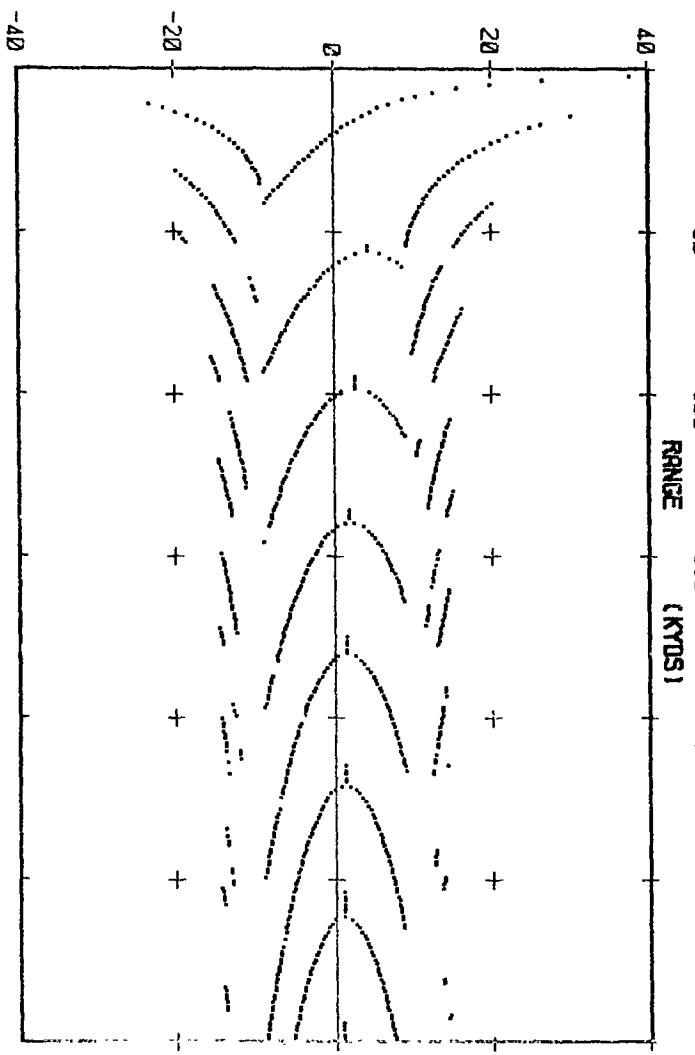
1450 M/S 1500 1550

LRAPP

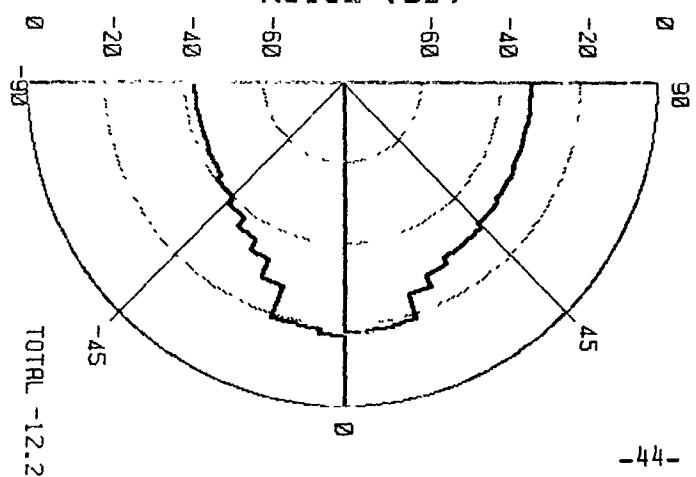
DB LOSS



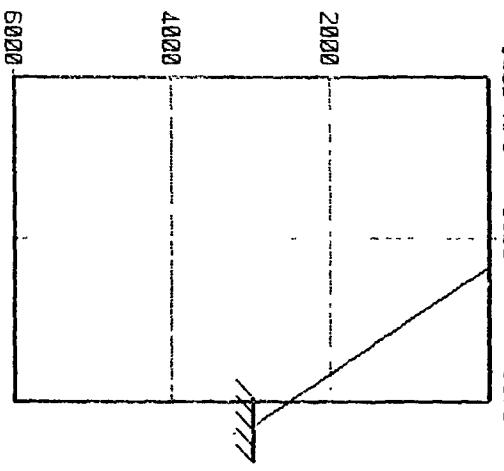
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



TOTAL -12.2 DB

70

AREA 3B WINTER

S 3dB R 6dB F 5d

1450 M/S 1530 1550

DB LOSS

110

+

+

+

-

-

4020

-

-

-

LRAPP

ARRIVAL ANGLE

20

+

+

+

+

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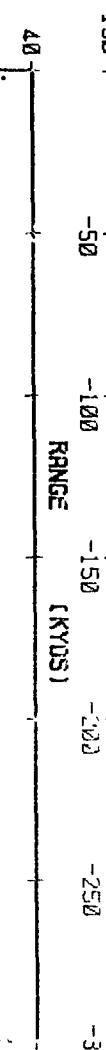
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DEPTH IN METERS

2020

-

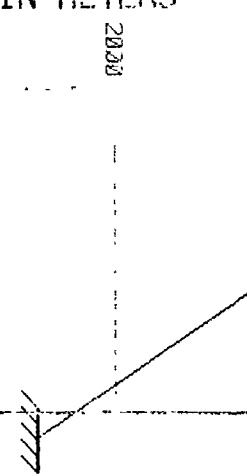
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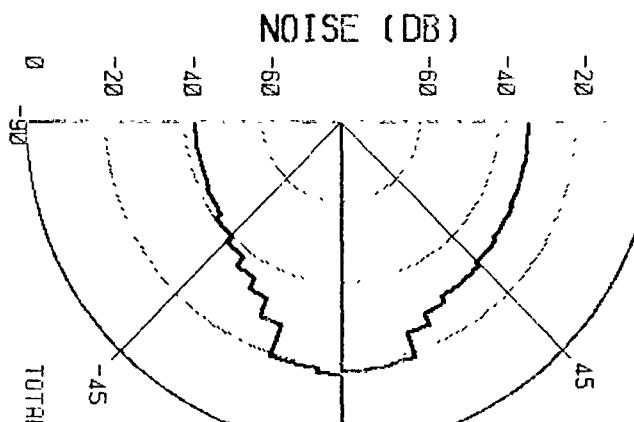
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-45-



TOTAL -12.2 DB

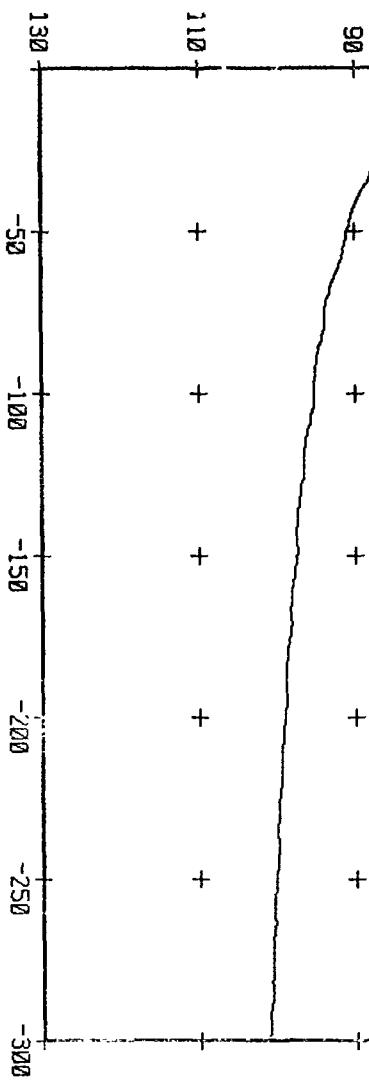
AREA 3B WINTER

S 20 R 9842 F 59

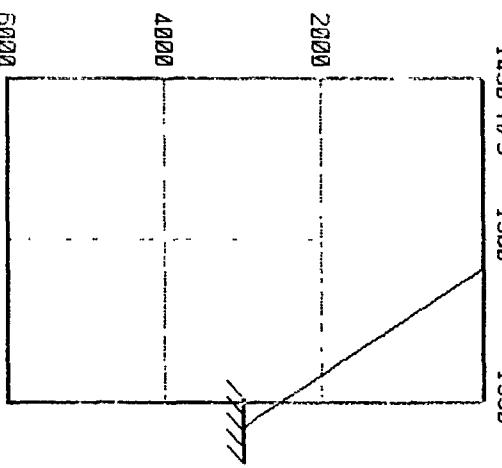
1450 M/S 1500 1554

L RAPP

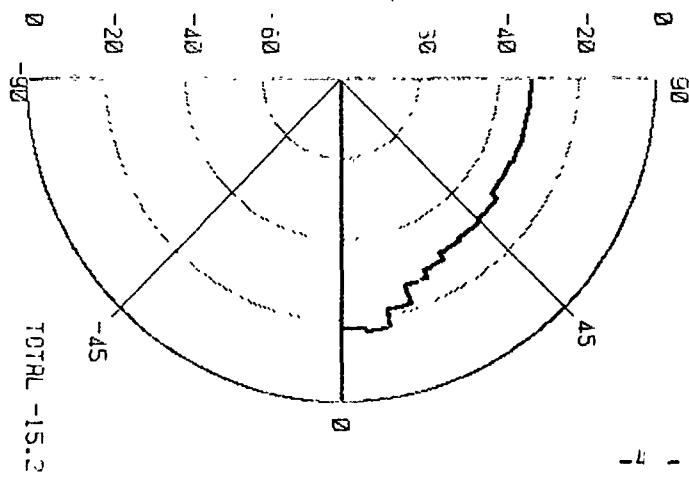
DB LOSS



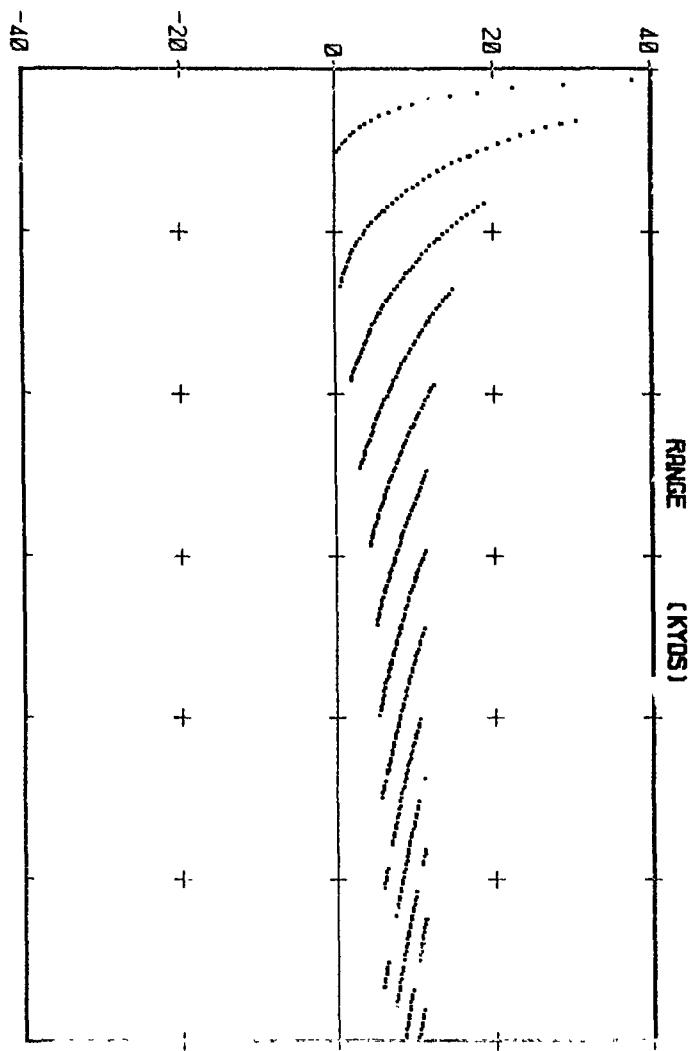
DEPTH IN METERS



NOISE (dB)



ARRIVAL ANGLE



70

AREA 3B WINTER

S 50 R 9842 F 53

1450 M/S 15200 1550

LRAPP

DB LOSS

110

+

+

+

+

+

+

-

-

90

+

+

+

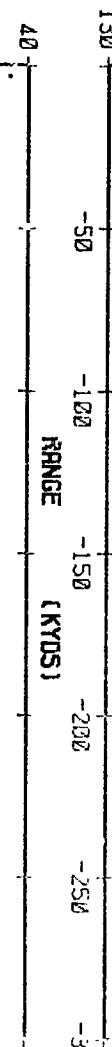
+

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ARRIVAL ANGLE

40

+

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20

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+

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-20

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-40

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-60

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-120

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-160

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-380

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-400

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-420

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-440

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-460

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-480

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-500

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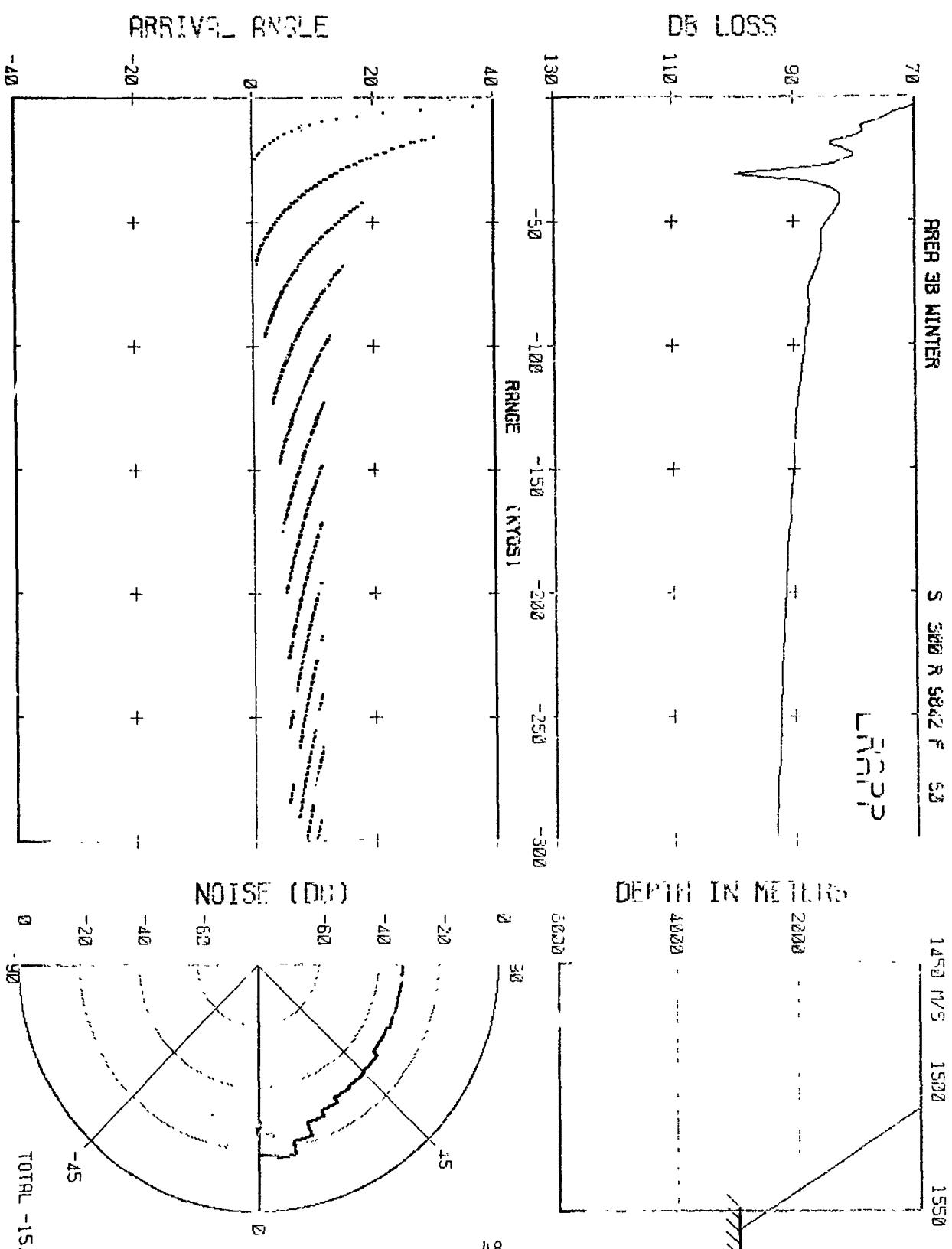
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-48-

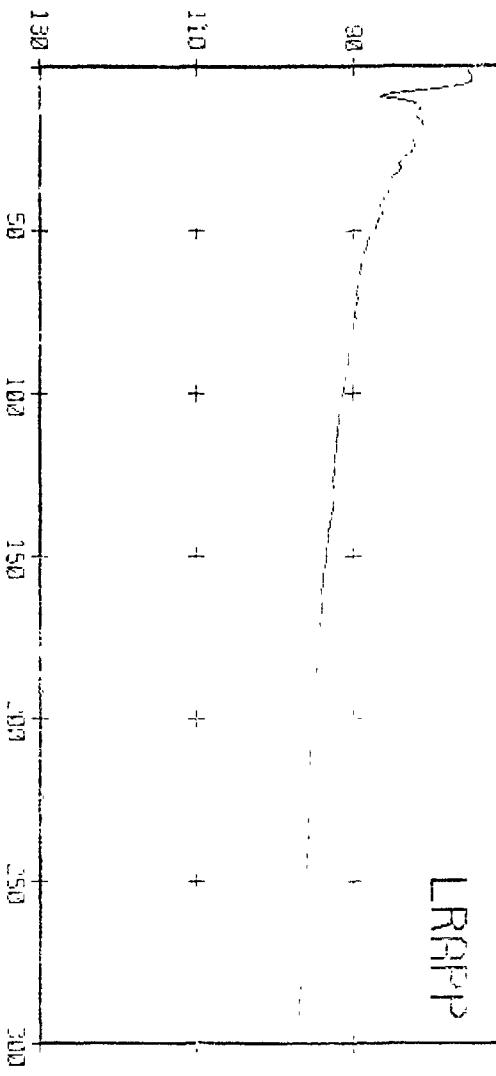
REF ID: A11111

S 29 R 64 F 79

1550 11 2 1550

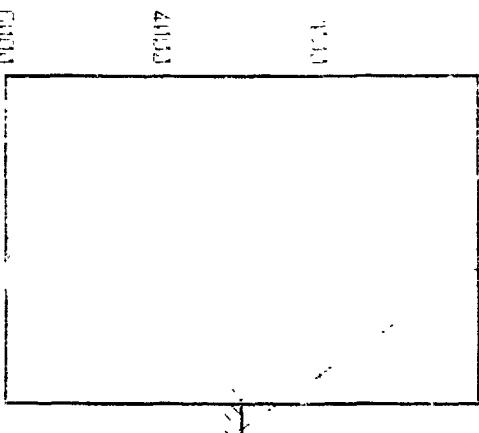
1550

DB LOSS

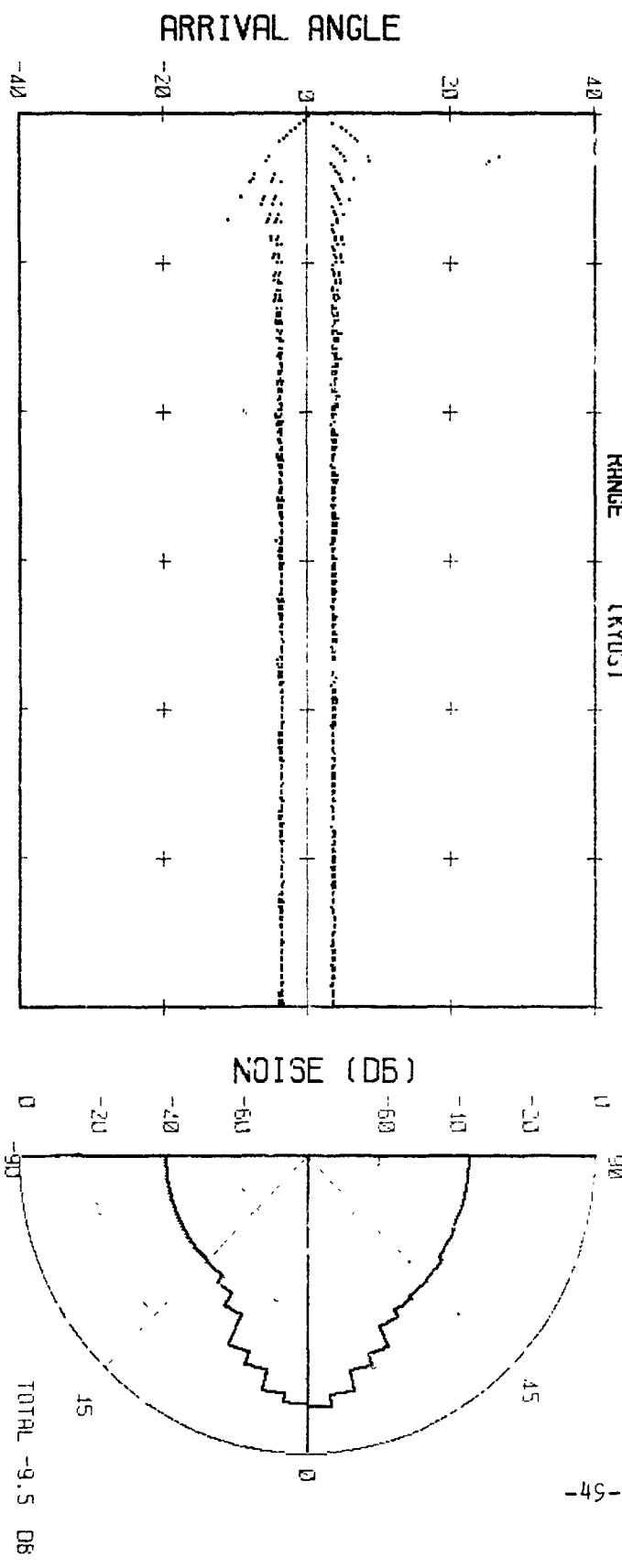


LRAFP

DEPTH IN METERS



NOISE (DB)



-49-

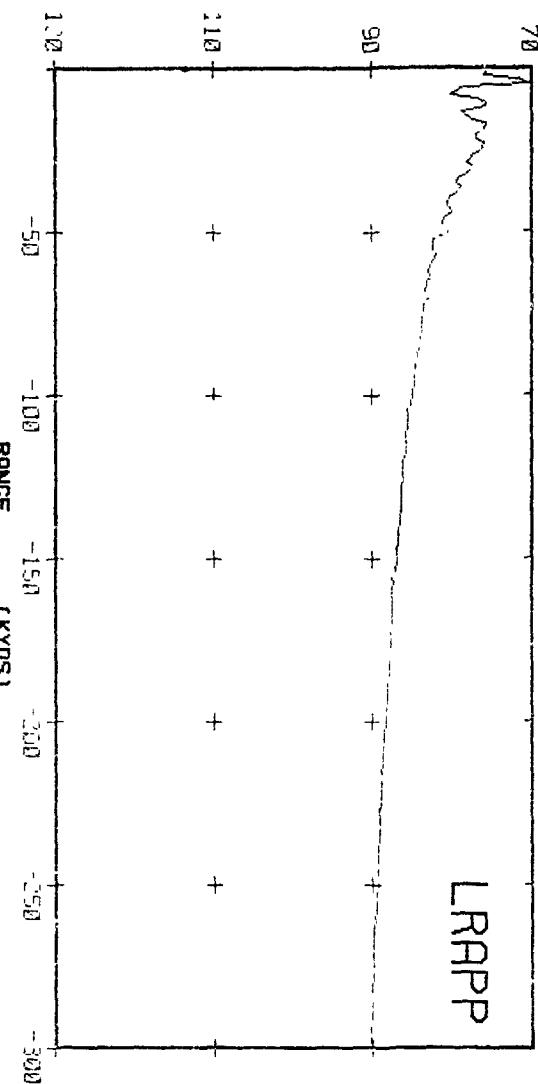
AREA 3B WINTER

S 50 R 60 F 70

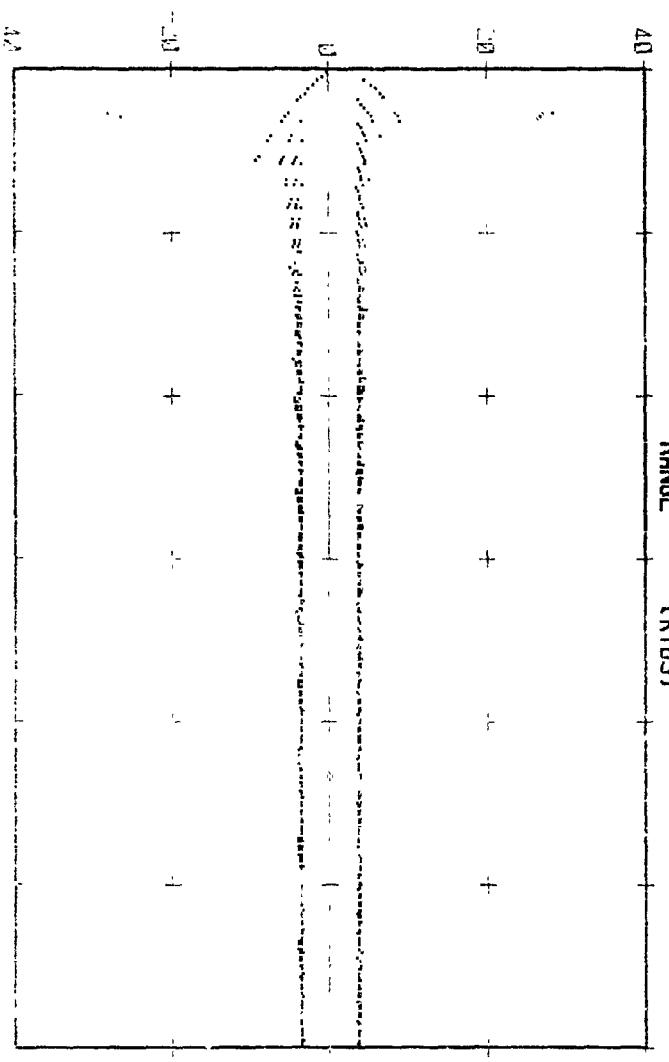
1450 m/s 1500 1550

LRAFP

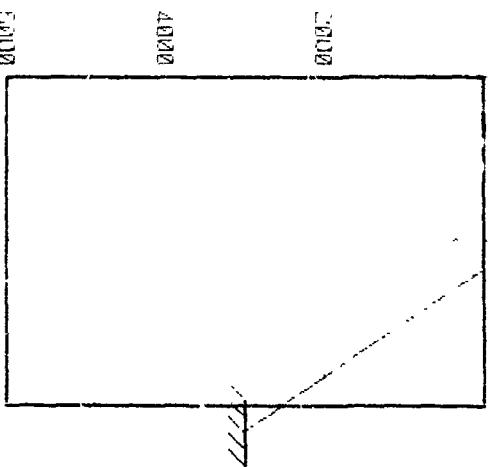
DB LOSS



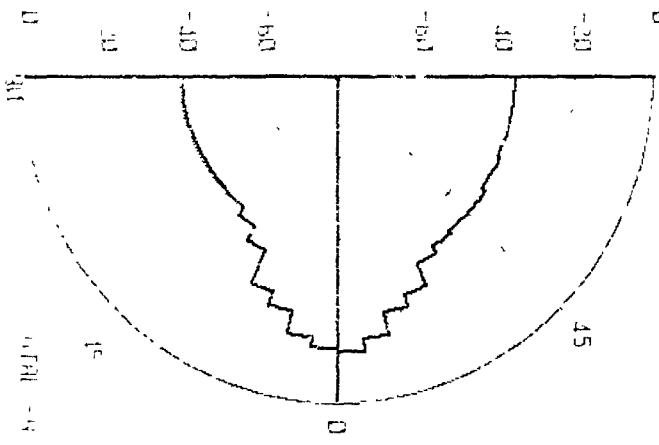
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

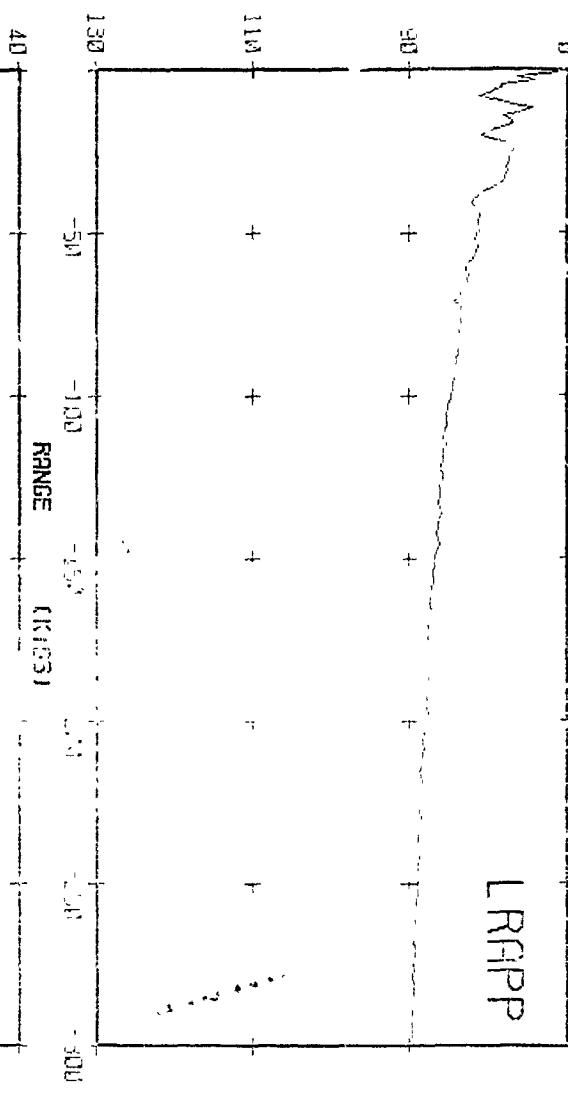
FREH 3B WINTER

S 302 R 63 F 70

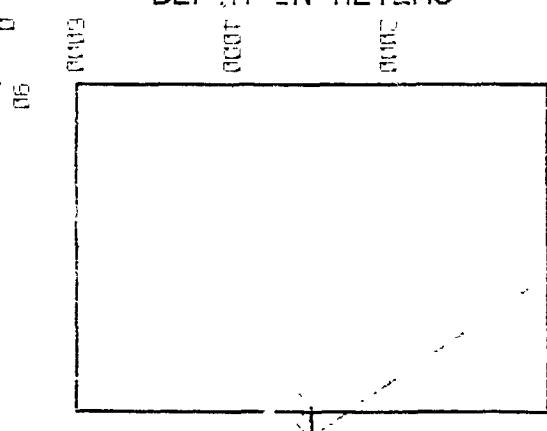
1450 145 1500 1550

LRAPP

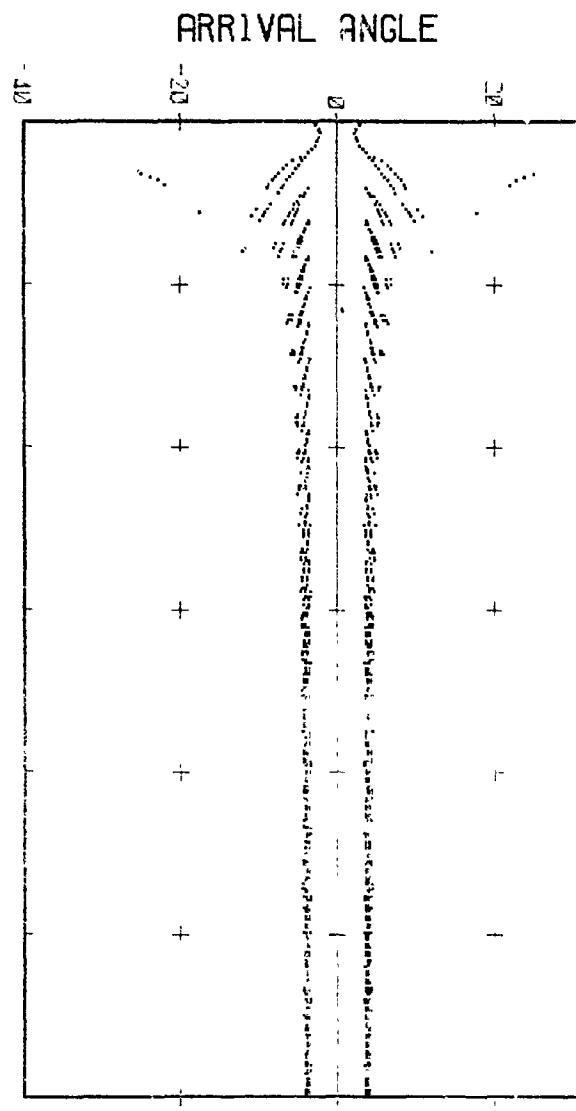
DB LOSS



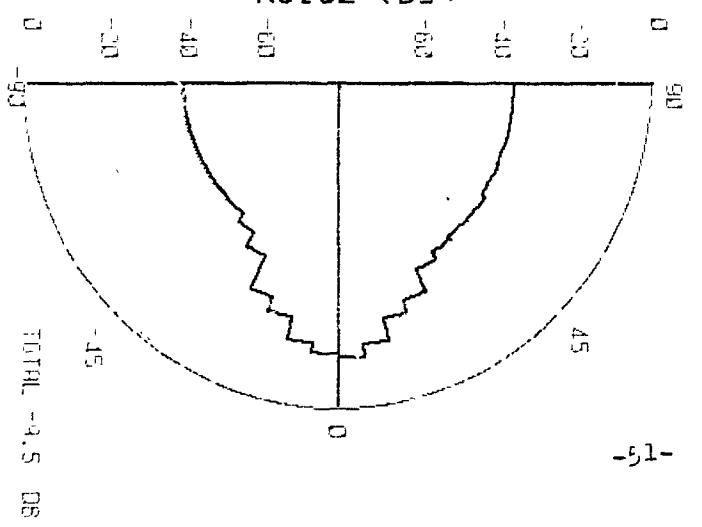
DEPTH IN METERS



NOISE (DB)



ARRIVAL ANGLE



ARR 3B WINTER

S 20 R 100 F 70

1450 1450 1500 1550

LRAFP

DB LOSS

130
110
90
70
50
30
10

-130 -110 -90 -70 -50 -30 -10

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70

ARR 3B WINTER

S 50 R 100 F 70

1450 113 1500 1550

LRAPP

DB LOSS

130
110
90
70
50
30
10
0

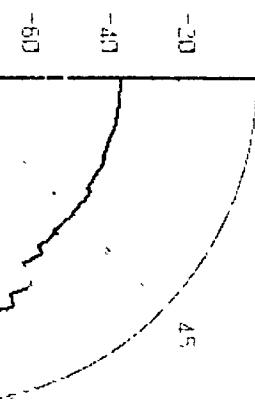
DEPTH IN METERS

5000
4000
3000
2000
1000
0

ARRIVAL ANGLE

20
10
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-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130

NOISE (DB)



-53-

-10

-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130

ARRER 3B WINTER

S 300 R 100 F 70

1450 1475 1500 1550

LRAPP

DB LOSS

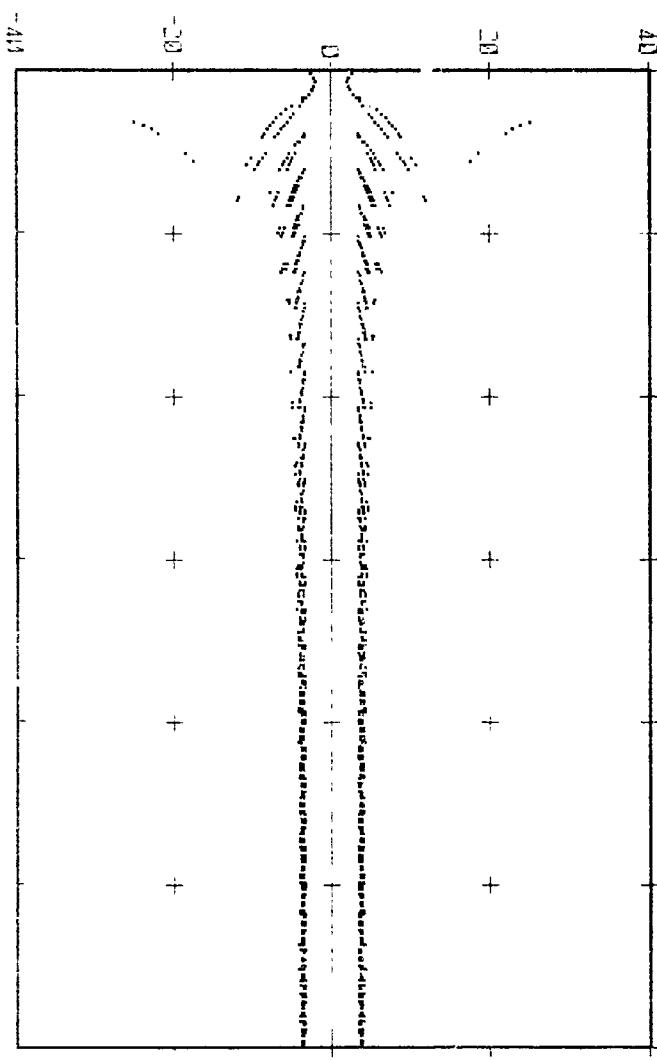
130
110
90
70

-50 -100 -150 -200 -250 -300

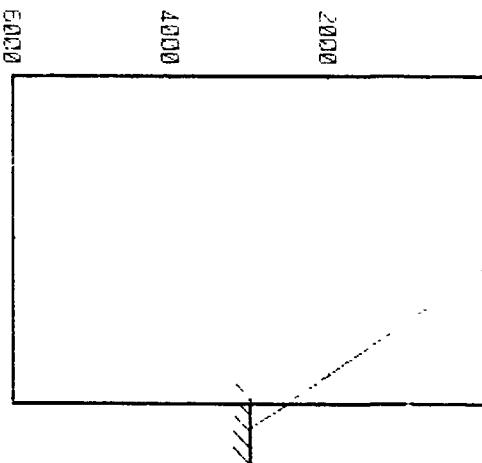
RANGE

(KYDS)

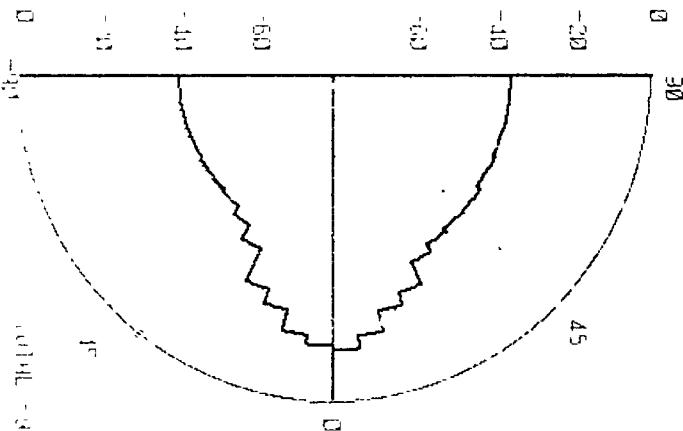
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



-54-

70

AREA 3B WINTER

S 20 R 300 F 70

1450 1450 1500 1550

LRAPP

DB LOSS

90

110

+

+

+

+

+

+

+

+

+

+

130
100
40
-50
-100
-150
-200
-250
-300

RANGE (KMS)

DEPTH IN METERS

3000

4000

5000

6000

7000

8000

9000

ARRIVAL ANGLE

20

0

+

+

+

+

+

+

+

+

+

+

NOISE (DB)

0

-20

-40

-60

-80

-100

-120

-140

-160

-40

0

+

+

+

+

+

+

+

+

+

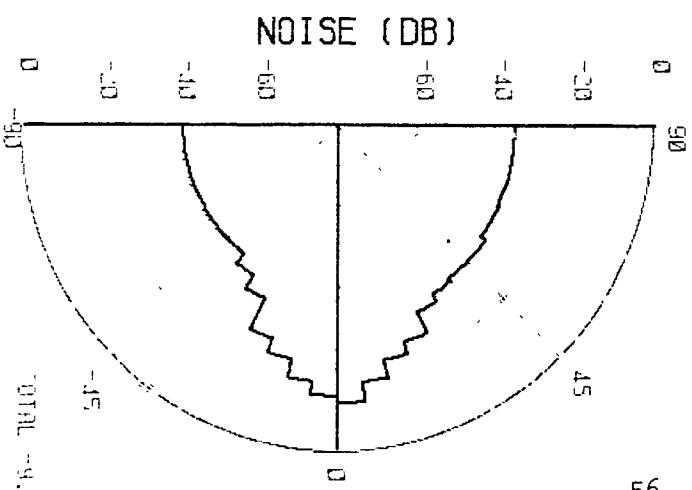
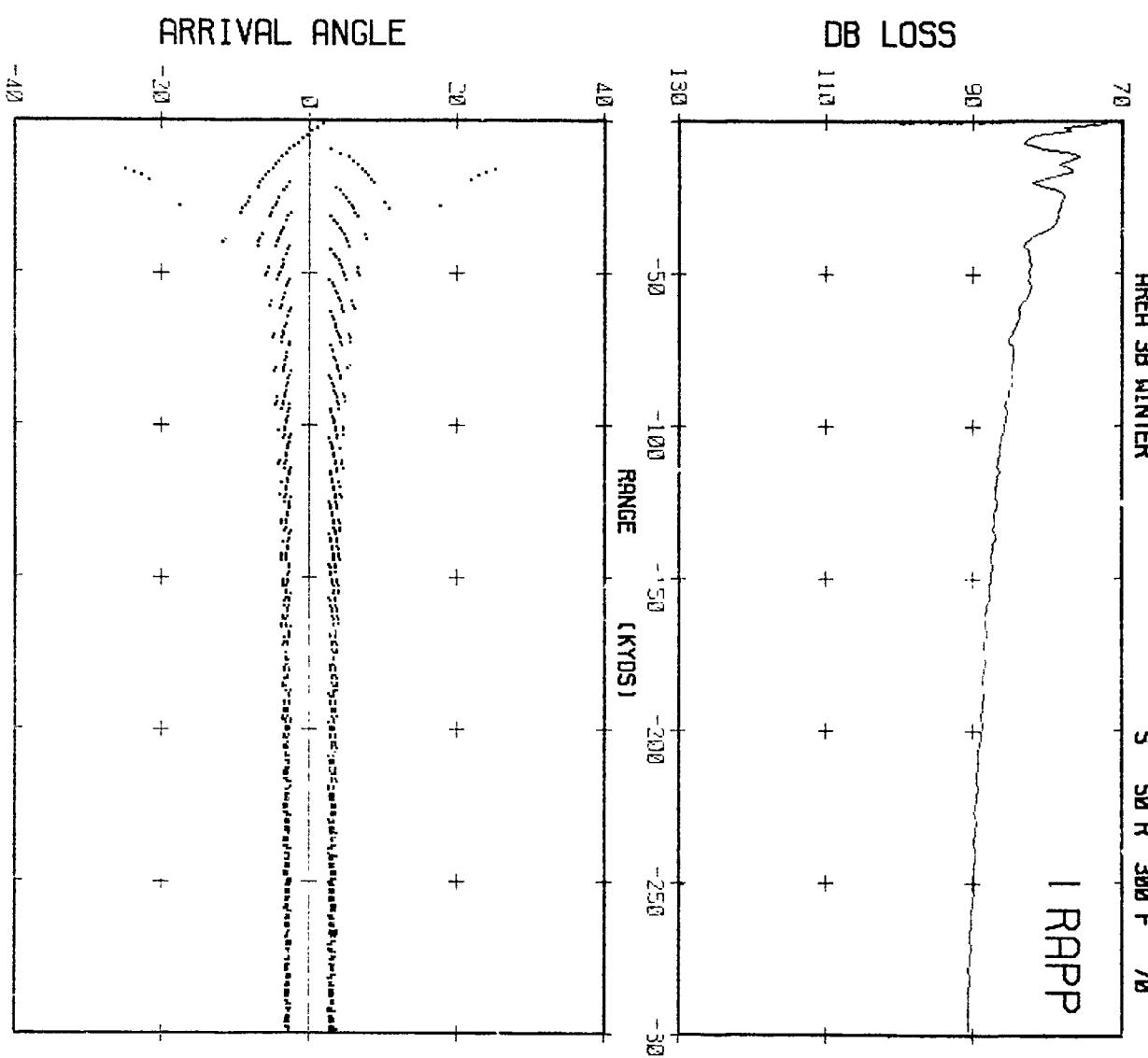
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2

AREA 3B WINTER

1

1450 1475 1500 1530



-56-

T

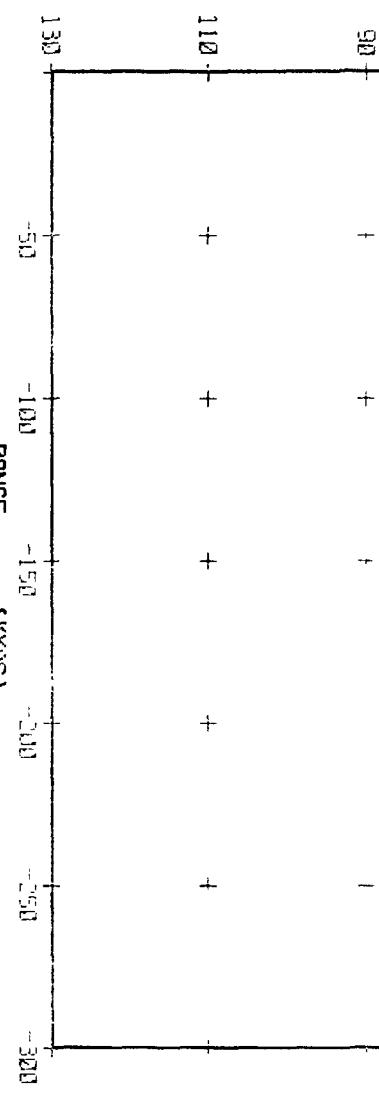
AREA 3B MINTER

S 320 R 360 F 70

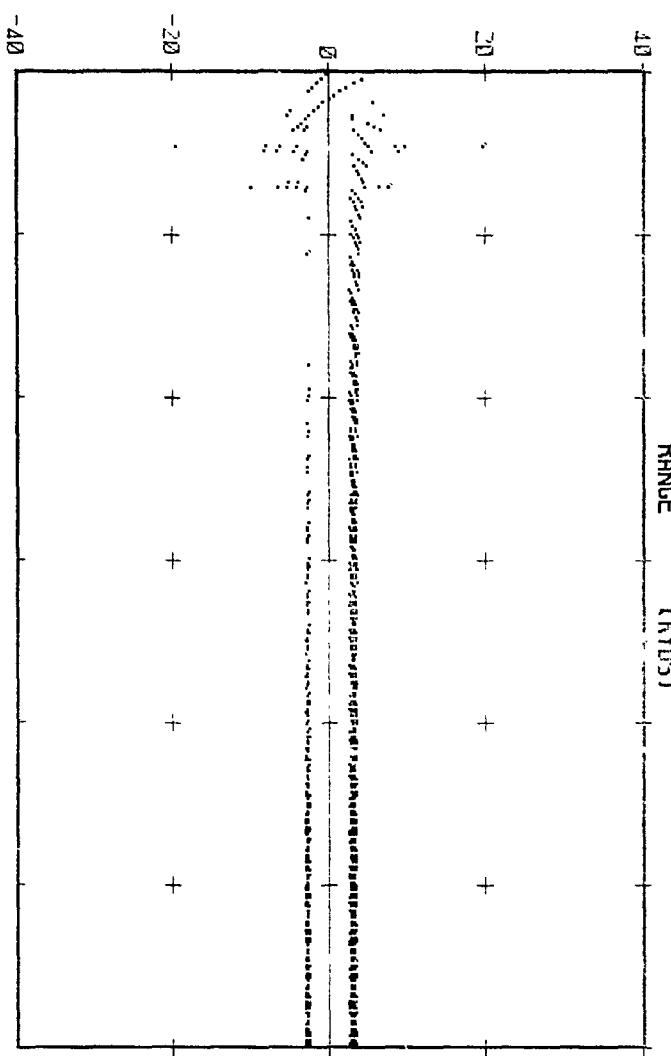
1450 145 1500 1550

LRHPP

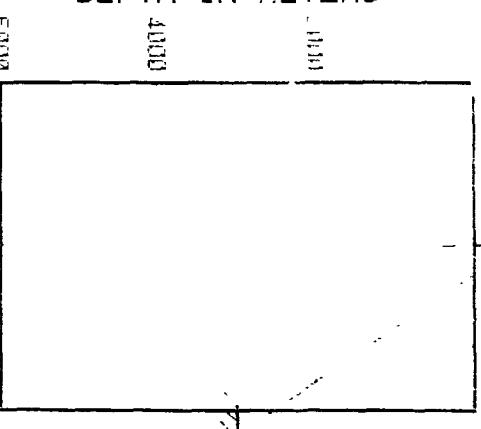
DB LOSS



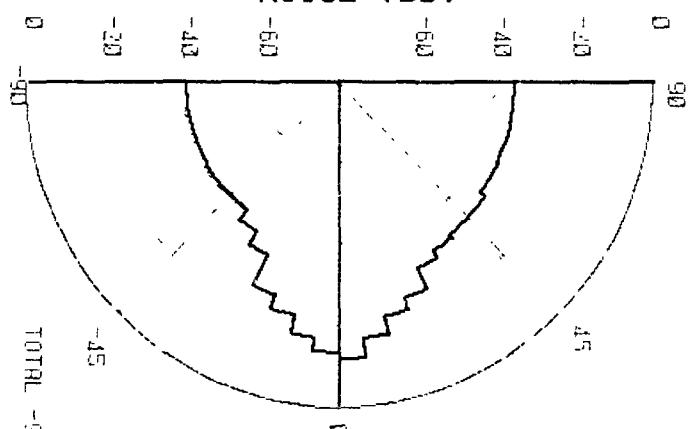
ARRIVAL ANGLE



DEPTH IN METERS

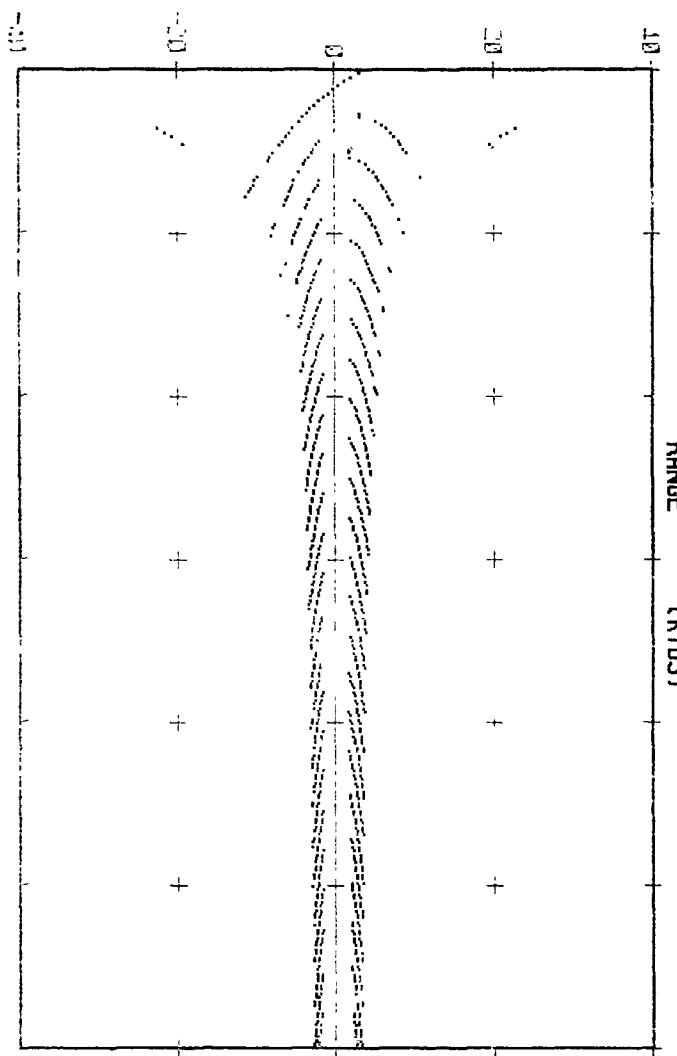


NOISE (DB)

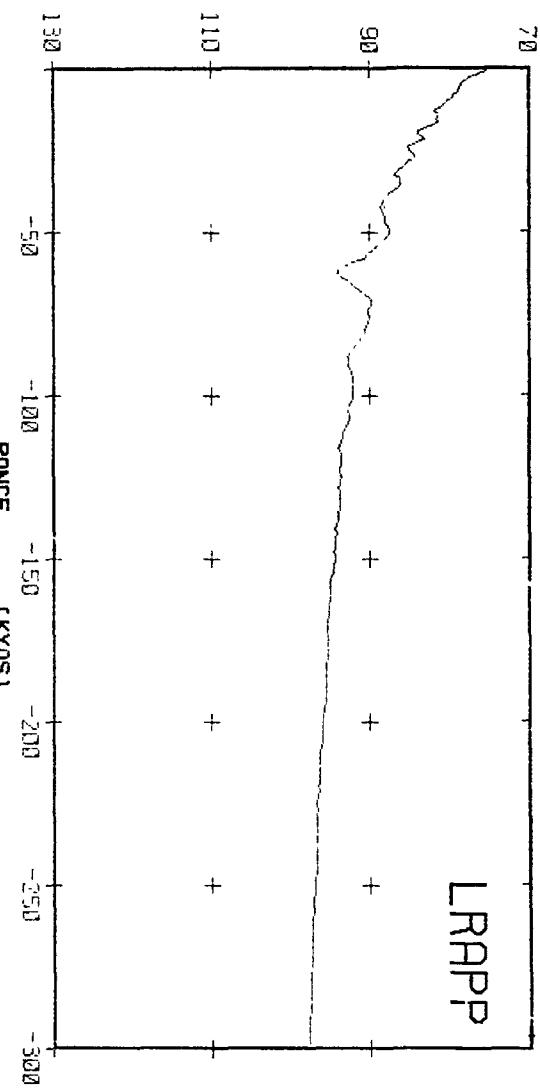


TOTAL -9.7 DB

ARRIVAL ANGLE



DB LOSS



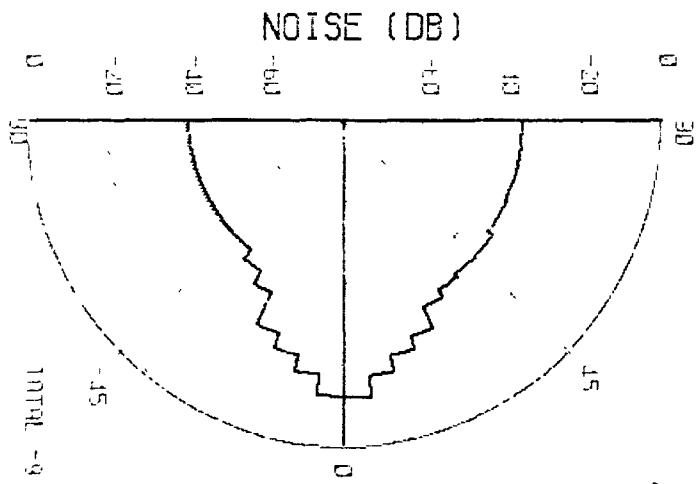
LRAAPP

RER 3B WINTER

S 20 R 500 F 70

1450 1450 1500 1550

DEPTH IN METERS



INITIAL -9.6 DB

AREA 3B WINTER

S 50 R 503 F 76

1450 115 1500 1550

LRRPP

DB LOSS

70

60

50

40

110

100

90

80

70

60

50

40

30

20

10

0

130

120

110

100

90

80

70

60

50

40

30

20

10

0

RANGE (KILOMETERS)

ARRIVAL ANGLE

-30

-20

-10

0

10

20

30

40

50

60

70

80

90

100

110

120

130

DEPTH IN METERS

1000

900

800

700

600

500

400

300

200

100

0

NOISE (DB)

-40

-30

-20

-10

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

-59-

70

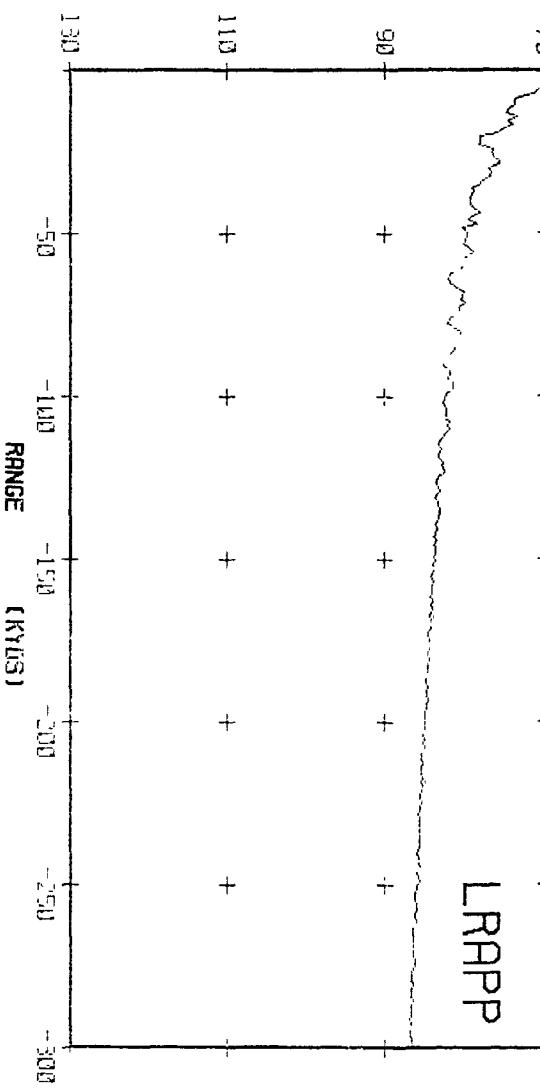
AREA 3B WINTER

S 300 R 500 F 70

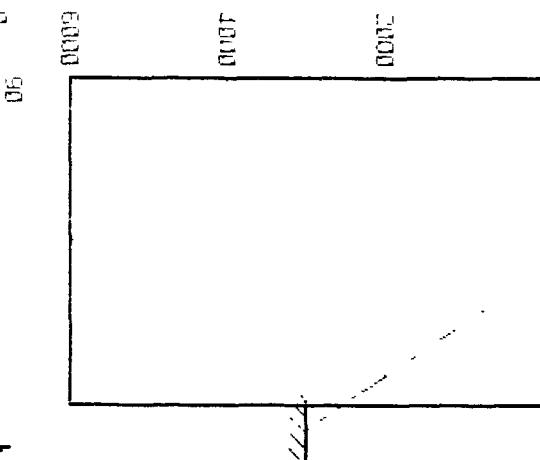
1450 M/5 1500 1550

LRAPP

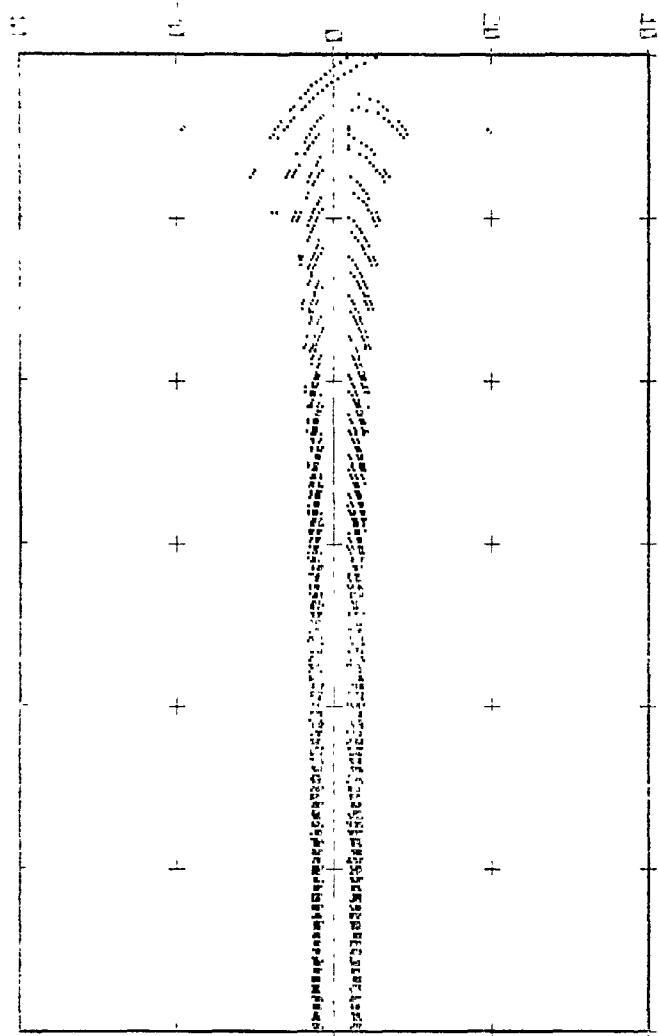
DB LOSS



DEPTH IN METERS



ARRIVAL ANGLE



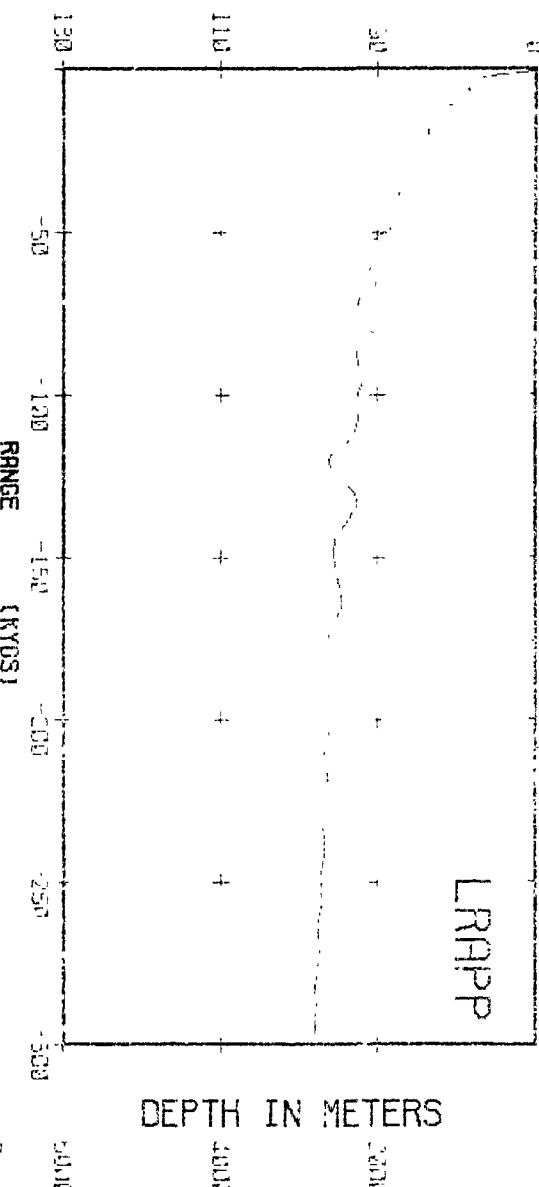
AREA 3B WINTER

S 26° 3' 1000' E 70

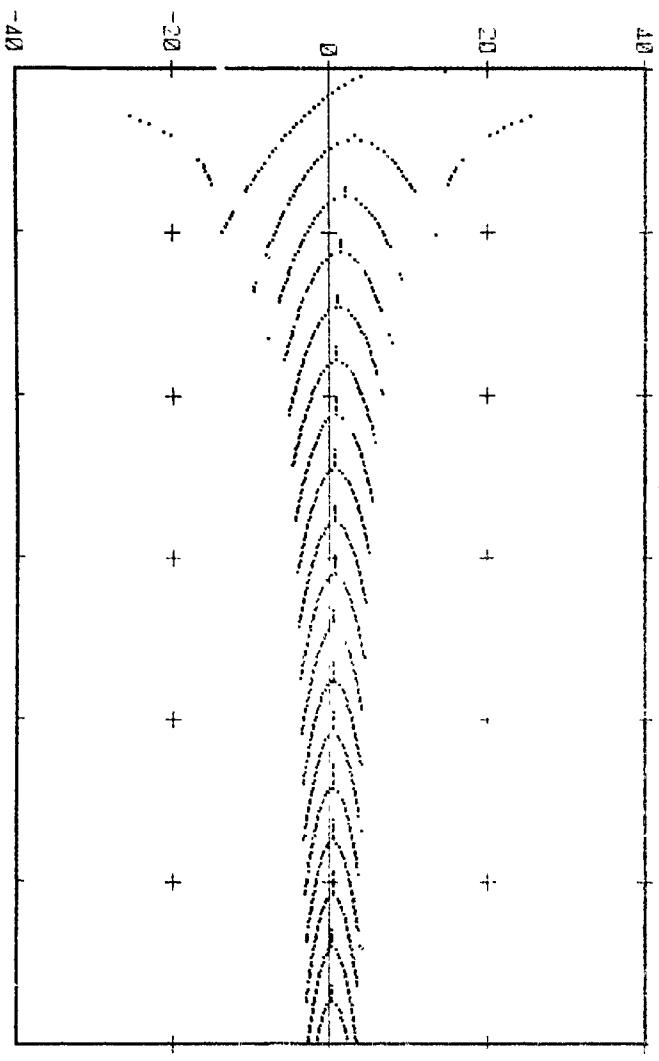
1453 1454 1539 1558

LRRAPP

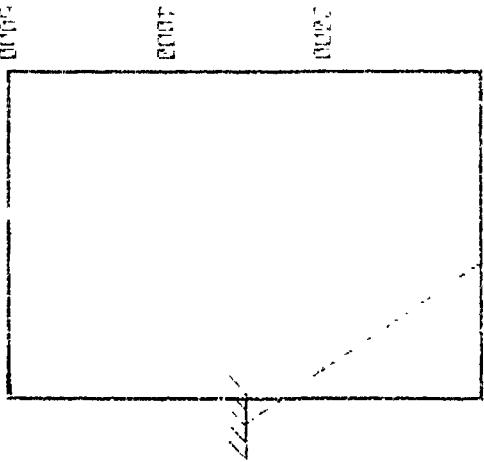
DB LOSS



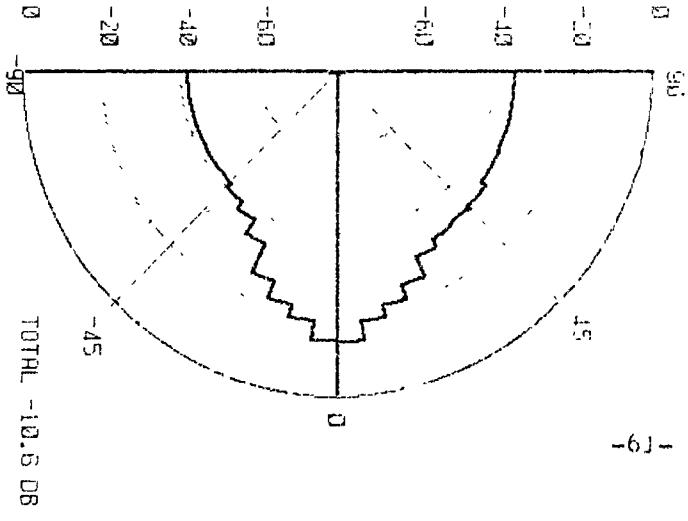
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

ARER 3B WINTER

S 50 R 1000 F 70

1450 M-5 1500 1550

90

+

+

+

+

+

+

+

+

DB LOSS

110

+

+

+

+

+

+

+

+

+

+

+

ARRIVAL ANGLE

40

-

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130

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LRAPP

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NOISE (DB)

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DEPTH IN METERS

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70

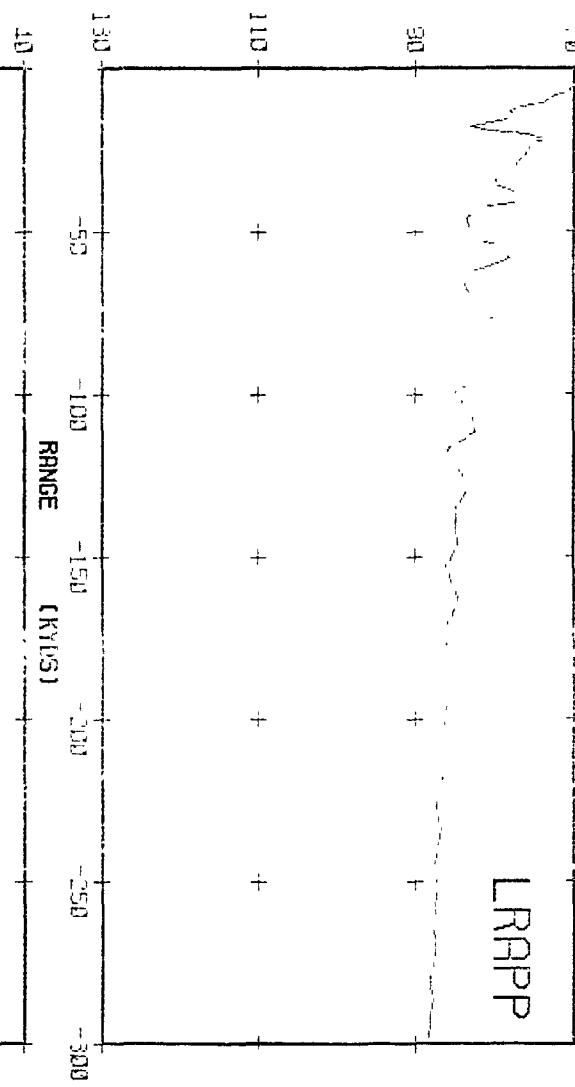
BTER 3B WINTER

S 35° R 100° F 70

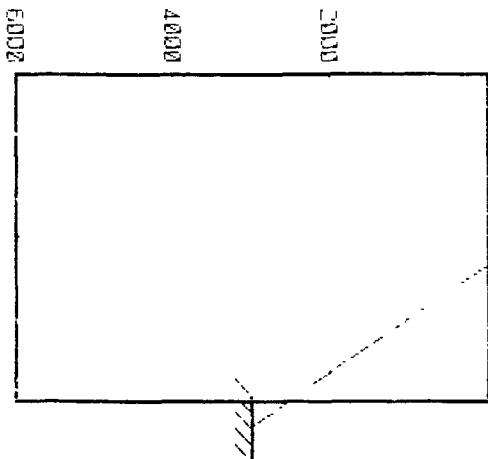
1450 11/5 1500 1550

LRAPP

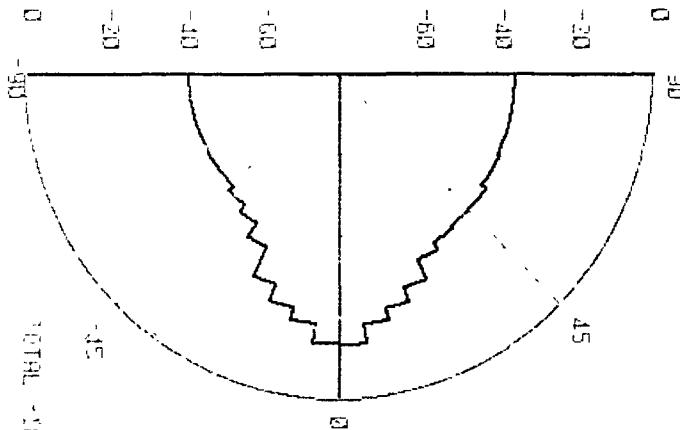
DB LOSS



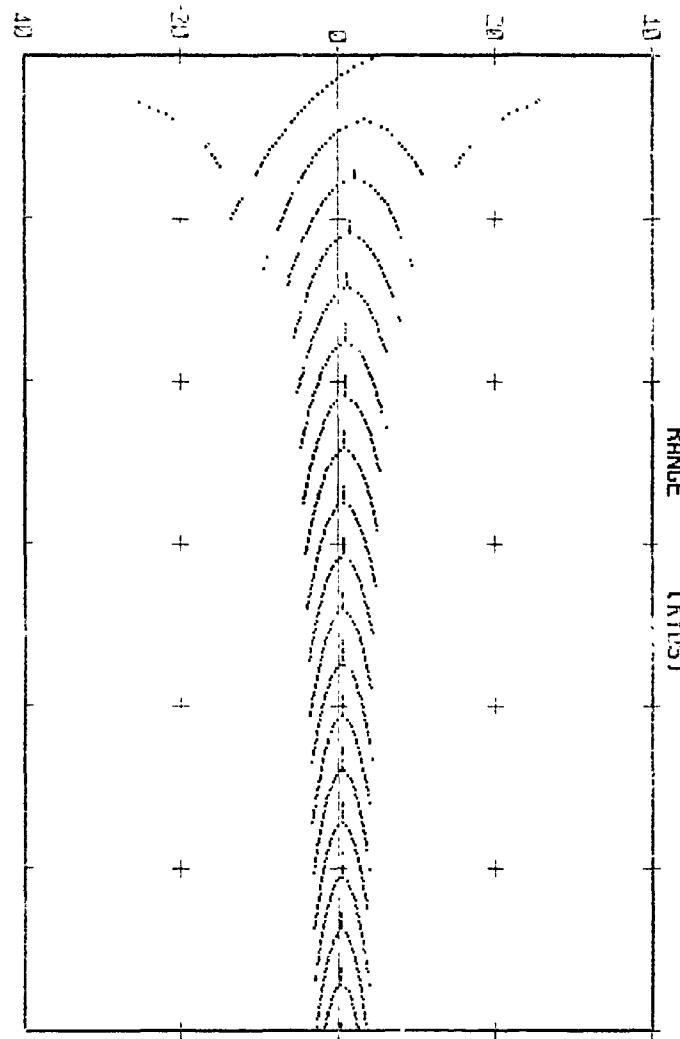
DEPTH IN METERS

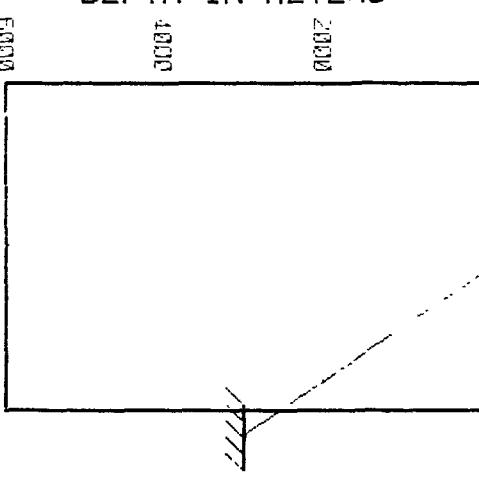
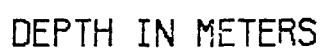
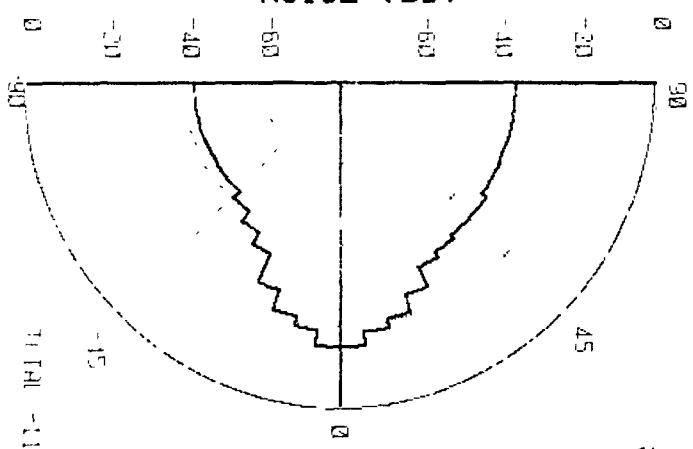
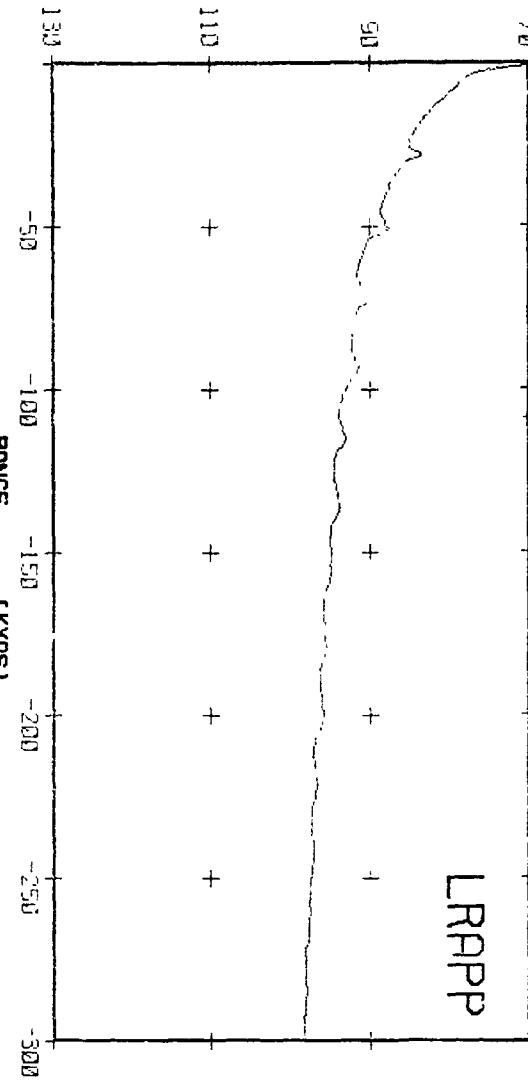
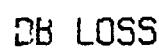
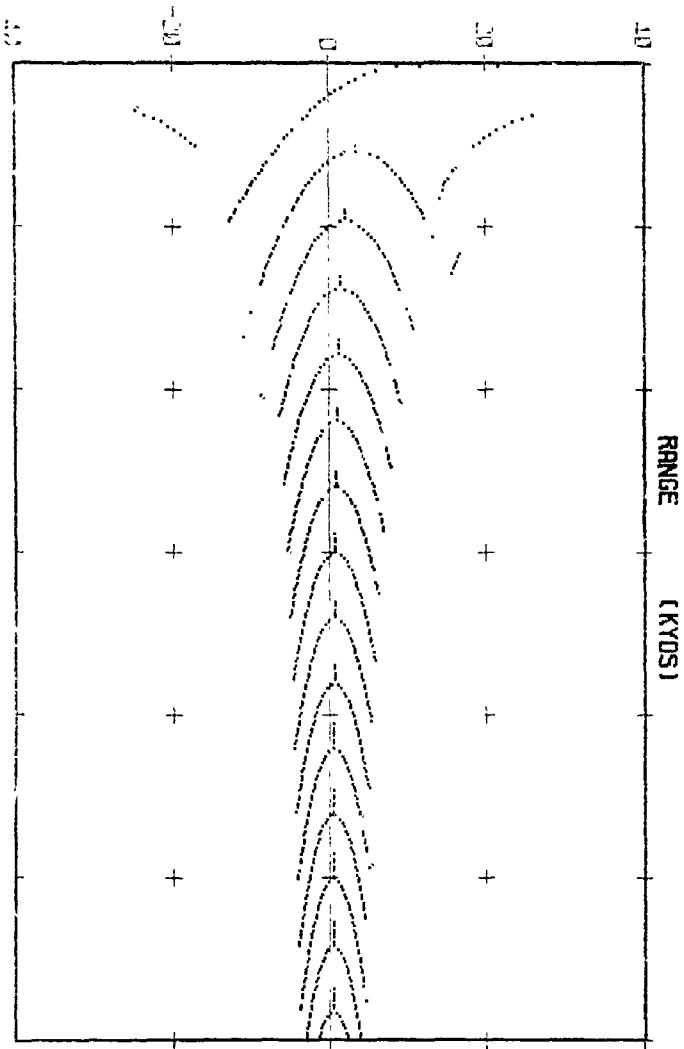


NOISE (DB)



ARRIVAL ANGLE





70

AREA 3B WINTER

S 50 R 15E F 70

1450 11.5 1500 1550

LRAPP

DB LOSS

90

110

+

+

+

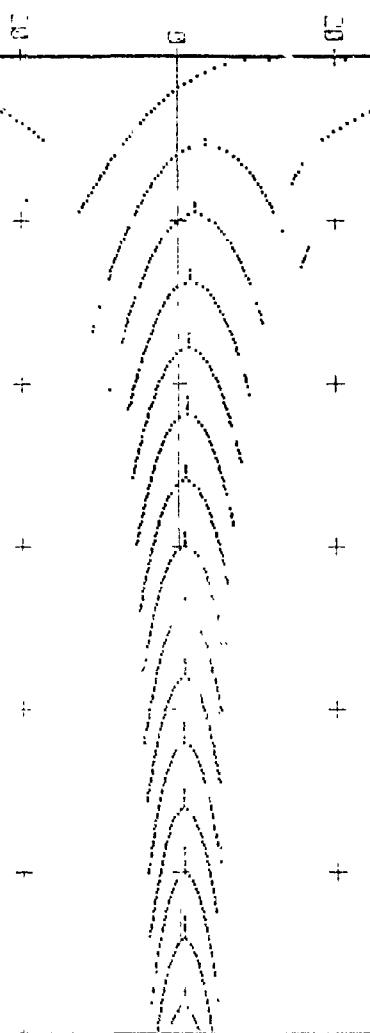
+

+

130
110
40
-50
-100
-150
-200
-250
-3005000
4000
D

-65-

ARRIVAL ANGLE



DEPTH IN METERS

2000

4000

5000

D

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

-110

-120

-130

-140

-150

-160

-170

-180

-190

-200

-210

-220

-230

-240

-250

-260

-270

-280

-290

-300

NOISE (DB)

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

430

440

450

460

470

480

490

500

510

520

530

540

550

560

570

580

590

600

610

620

630

640

650

660

670

680

690

700

710

720

730

740

750

760

770

780

790

800

810

820

830

840

850

860

870

880

890

900

910

920

930

940

950

960

970

980

990

1000

1010

1020

1030

1040

1050

1060

1070

1080

1090

1100

1110

1120

1130

1140

1150

1160

1170

1180

1190

1200

1210

1220

1230

1240

1250

1260

1270

1280

1290

1300

1310

1320

1330

1340

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1370

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1390

1400

1410

1420

1430

1440

1450

1460

1470

1480

1490

1500

1510

1520

1530

1540

1550

0

15

30

45

60

75

90

105

120

135

150

165

180

195

210

225

240

255

270

285

300

315

330

345

360

375

390

405

420

435

450

465

480

495

510

525

540

555

570

585

600

615

630

645

660

675

690

705

720

735

750

765

780

795

810

825

840

855

870

885

900

915

930

945

960

975

990

1005

1020

1035

1050

1065

1080

1095

1110

1125

1140

1155

1170

1185

1200

1215

1230

1245

1260

1275

1290

1305

1320

1335

1350

1365

1380

1395

1410

1425

1440

1455

1470

1485

1500

1515

1530

1545

1560

1575

1590

1605

1620

1635

1650

1665

1680

1695

1710

1725

1740

1755

1770

1785

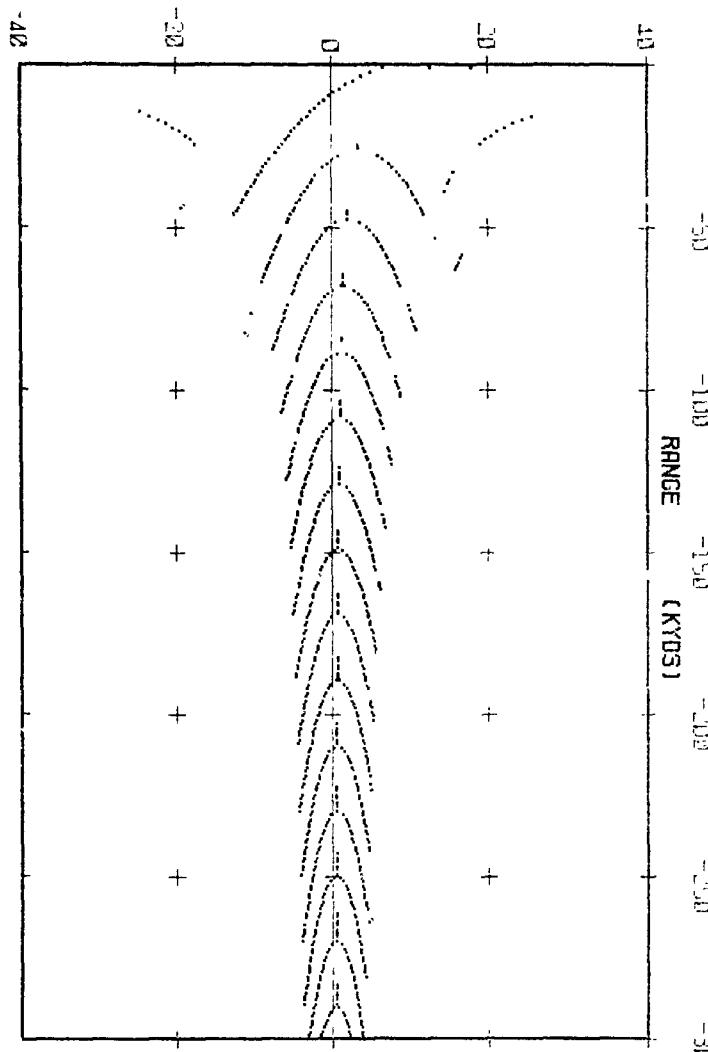
1800

1815

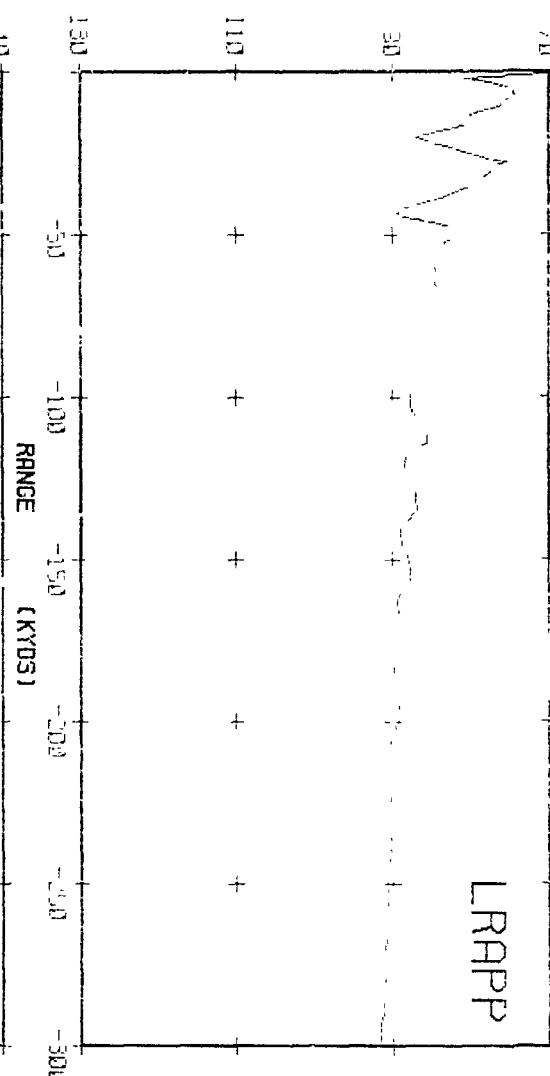
1830

1845

ARRIVAL ANGLE

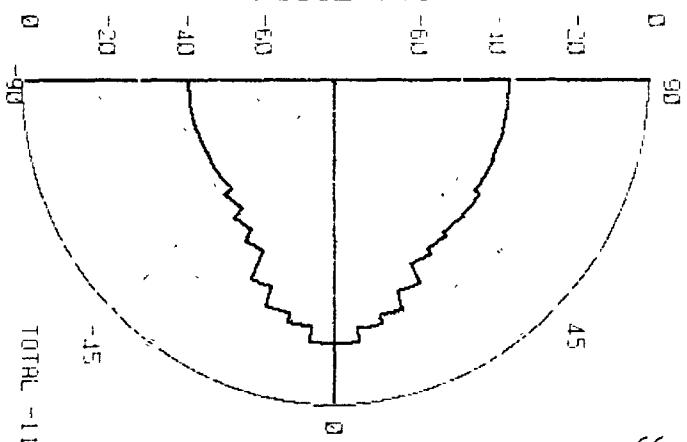


DB LOSS

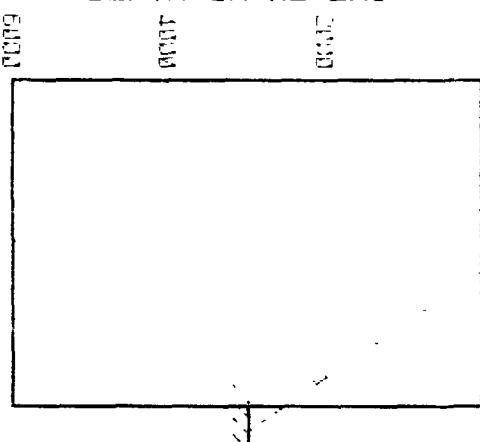


LRAFP

NOISE (DB)



DEPTH IN METERS



RERA 3B WINTER

S 303 R 150M F 74

145.0 145.0 145.0

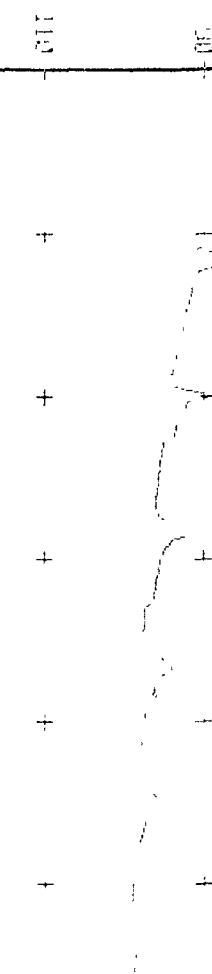
TOTAL -11.6 dB

PITCH 3B WINTER S 20 R 6233 F 70

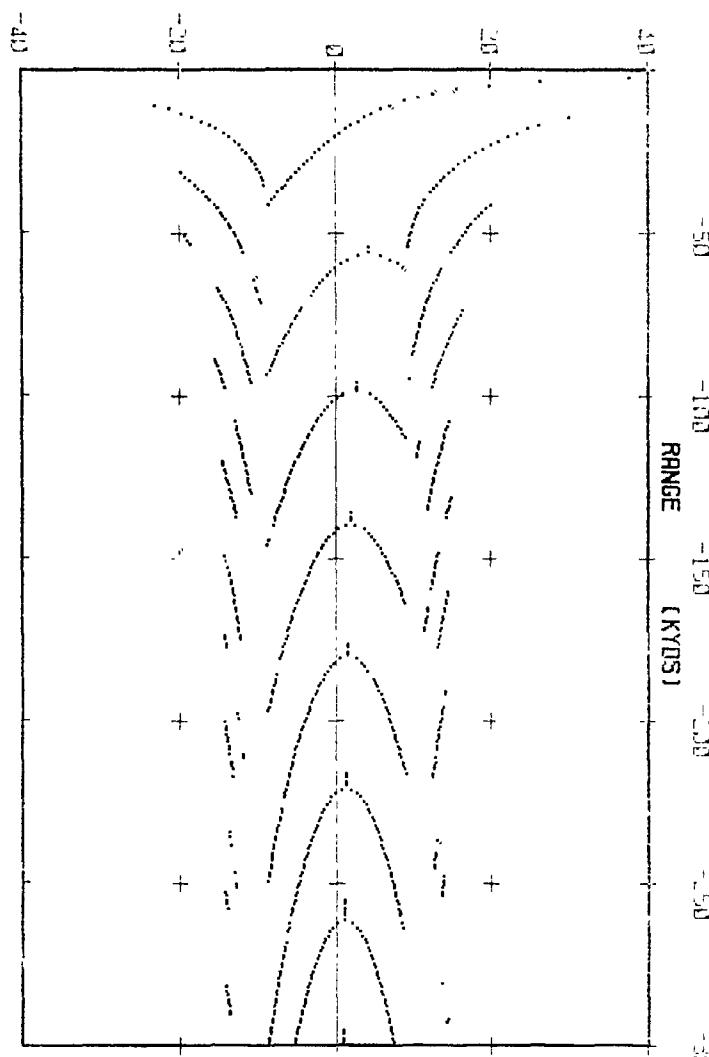
1450 11.5 1500 1550

LRAAPP

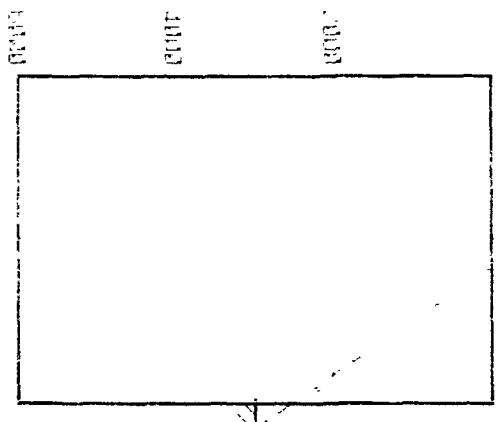
DB LOSS



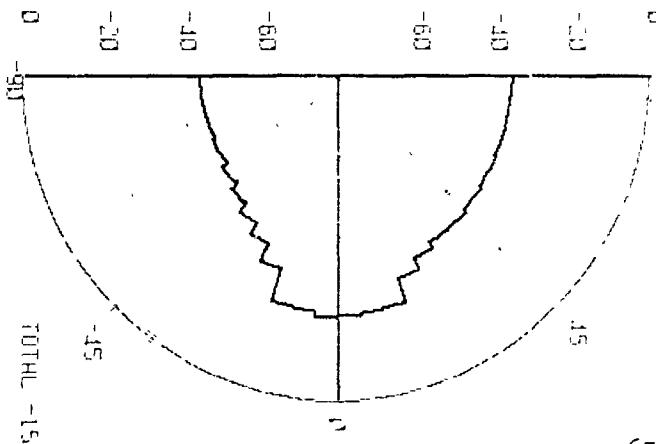
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

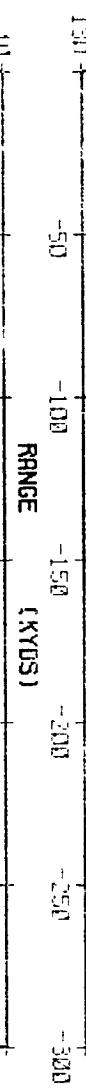
AREA 3B WINTER

S 50 R 6000 F 70

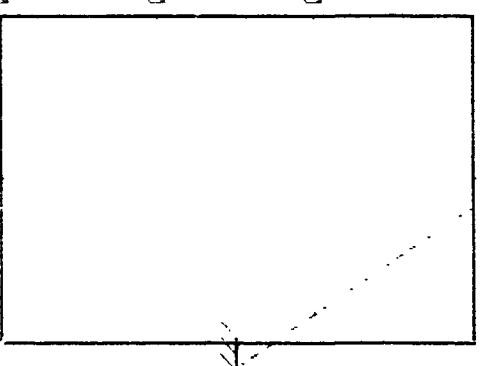
1450 11.5 1500 1550

LRAPP

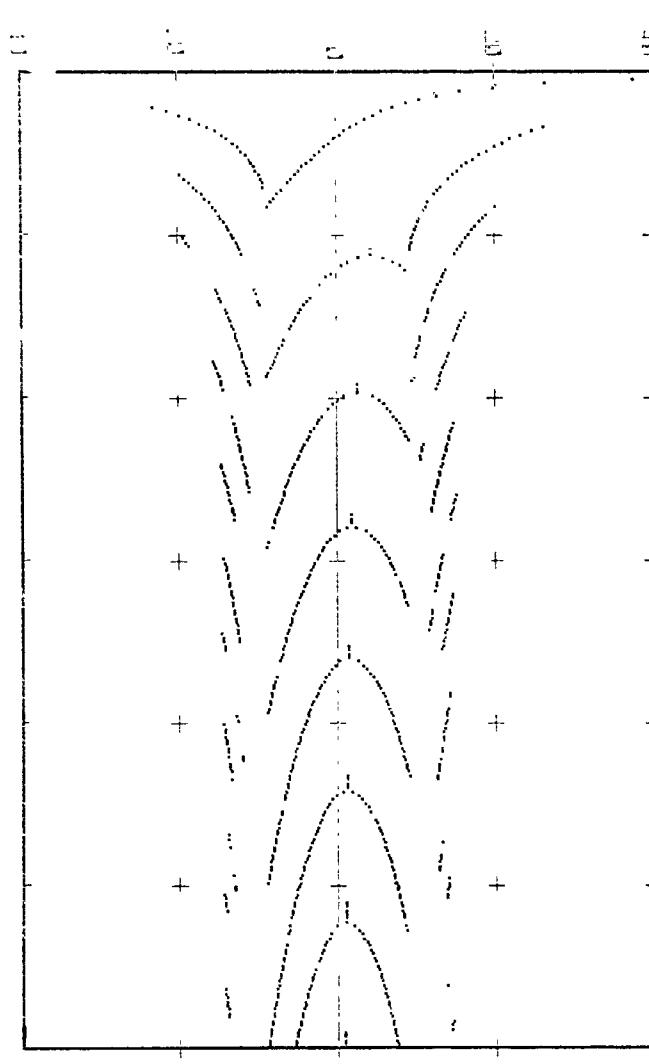
DB LOSS

6000
4000

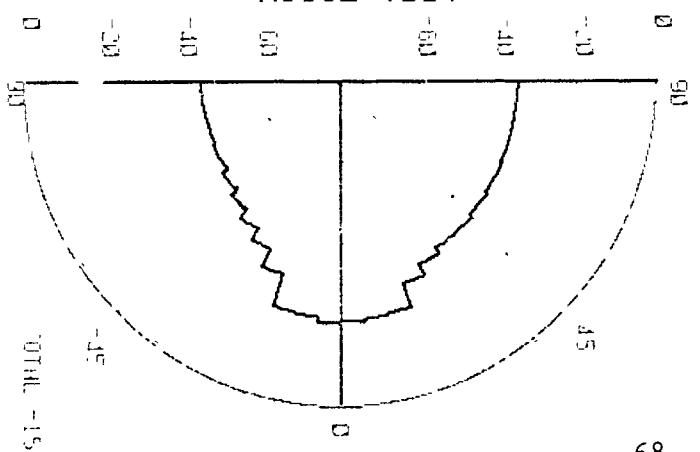
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL - 15.4 dB

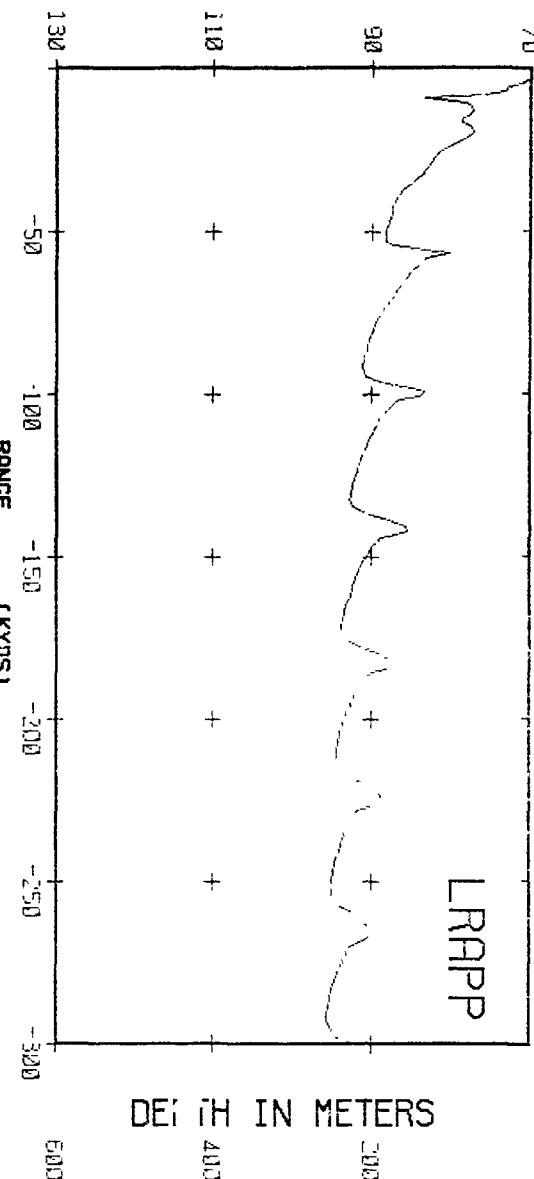
70

ARRER 3B WINTER

S 300 R 600 F 70

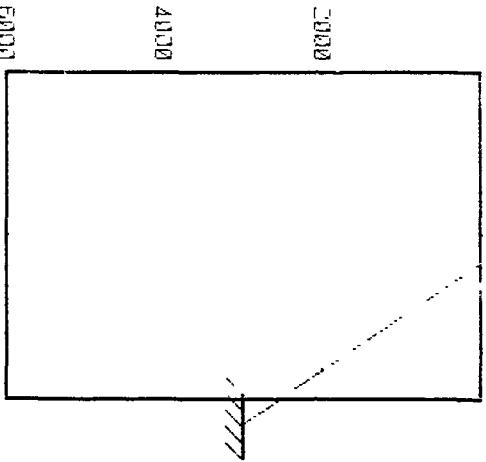
1450 M/S 1500 1550

DB LOSS

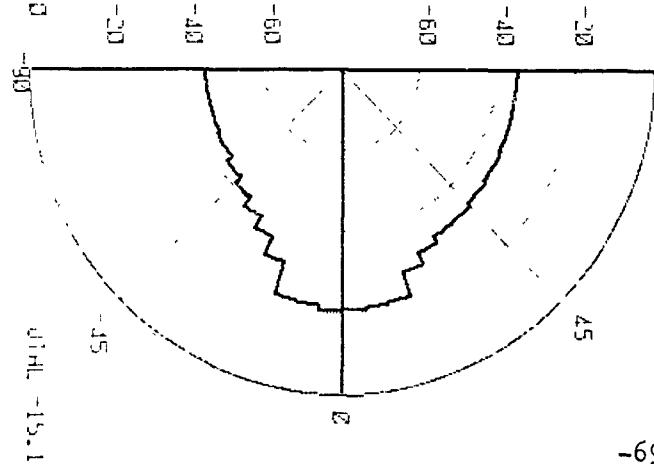


LRAPP

DEPTH IN METERS



NOISE (DB)



AREA 3B WINTER

S 20 R 9842 F 70

1450 M/S 1500 1550

L RAPP

DB LOSS

+ + + + + + + + + +

130
110
90
70
50
30
10
0

-300 -250 -200 -150 -100 -50 0

RANGE (KIYDS)

DEPTH IN METERS

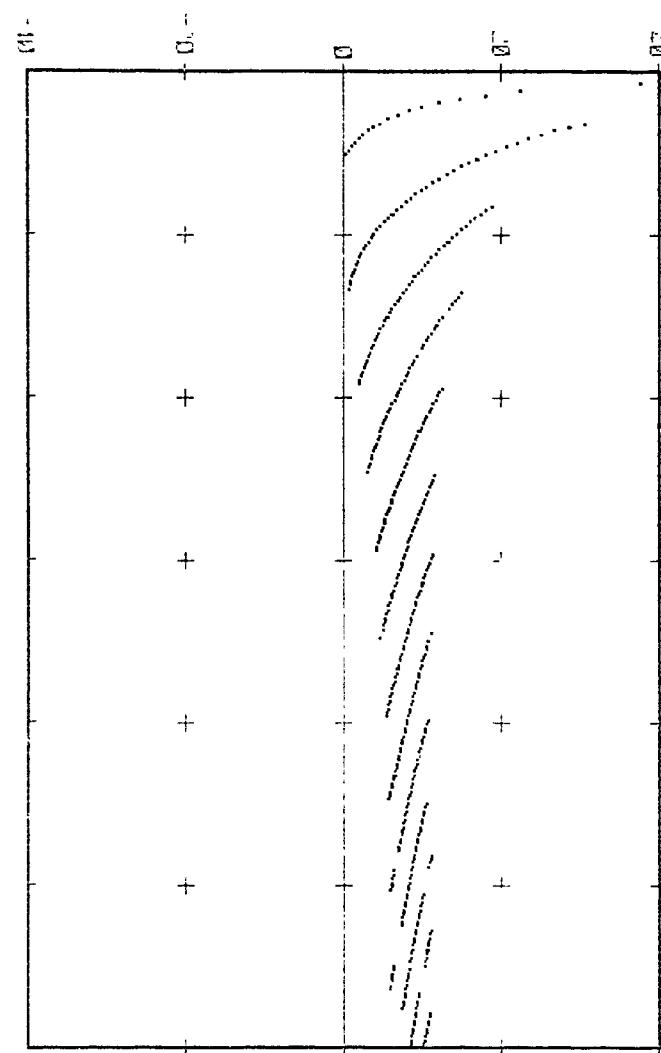
2000

4000

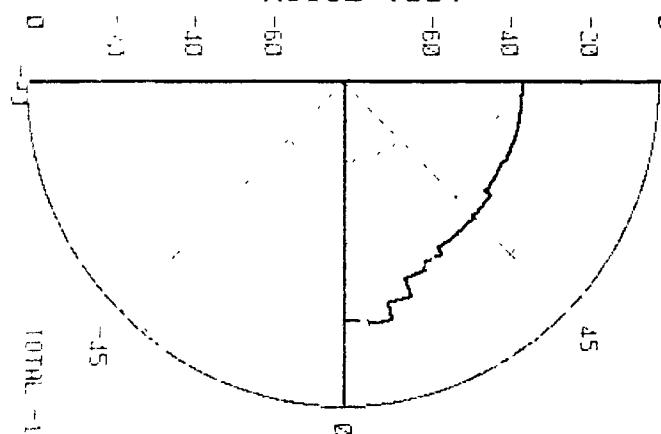
6000

8000

ARRIVAL ANGLE



NOISE (DB)



10TH, -13.1 08

-70-

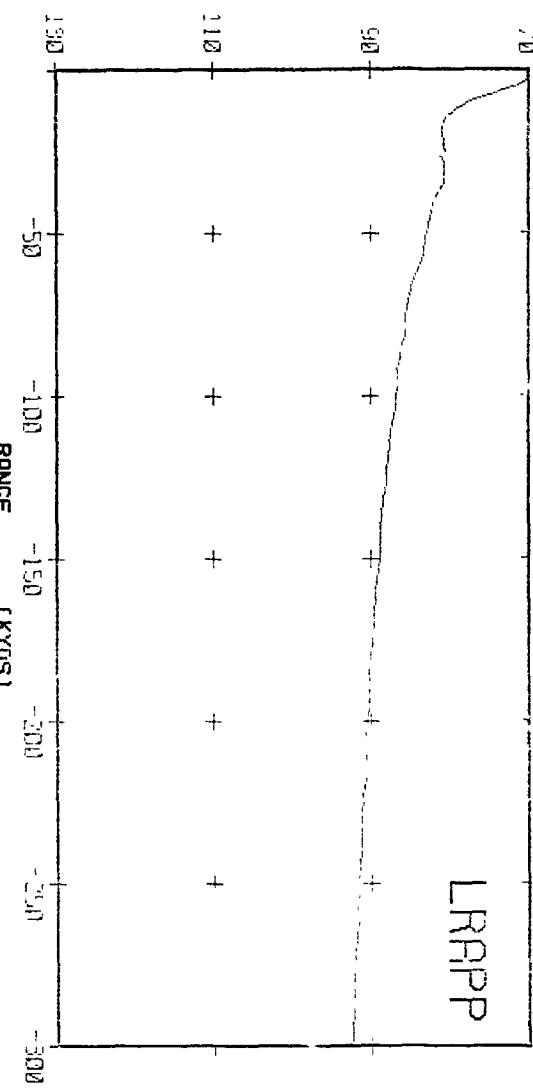
AREA 3B WINTER

S 50 R 9842 F 70

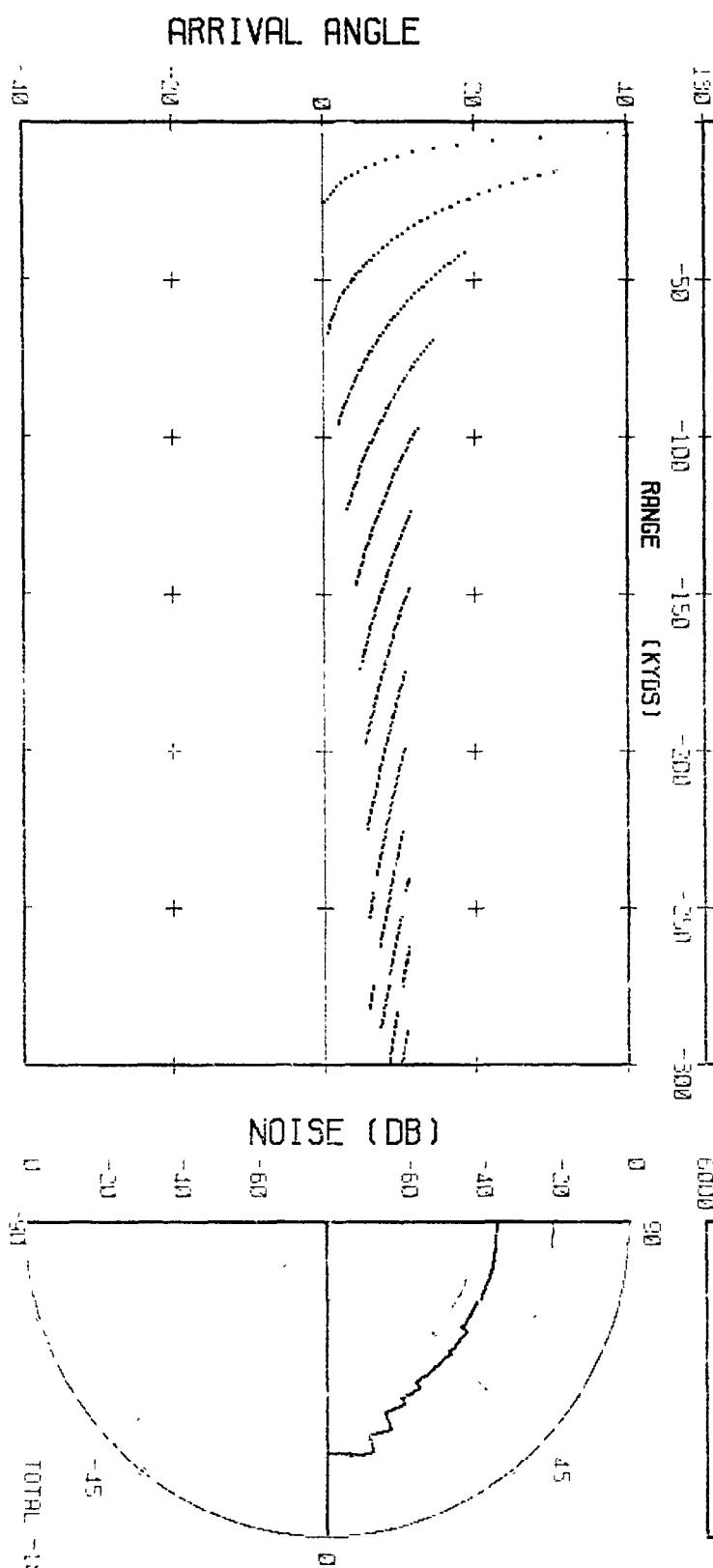
1450 145 1500 1550

LRRAPP

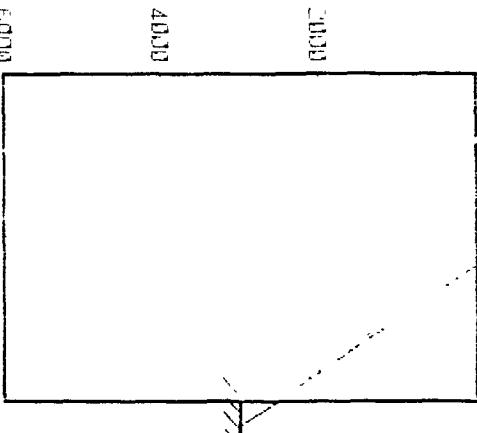
DB LOSS



NOISE (DB)



DEPTH IN METERS

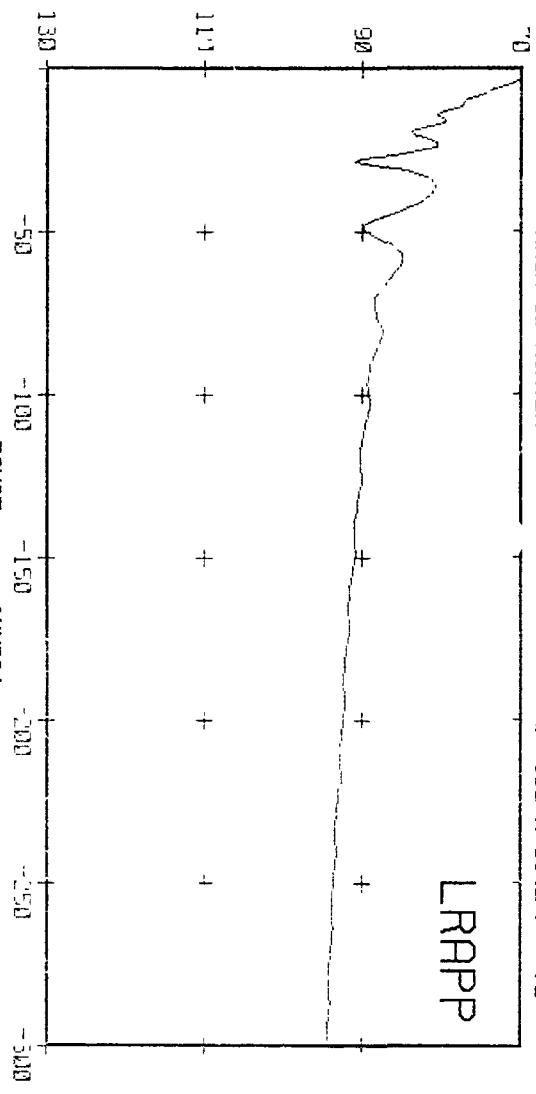


AIR AREA 3B WINTER

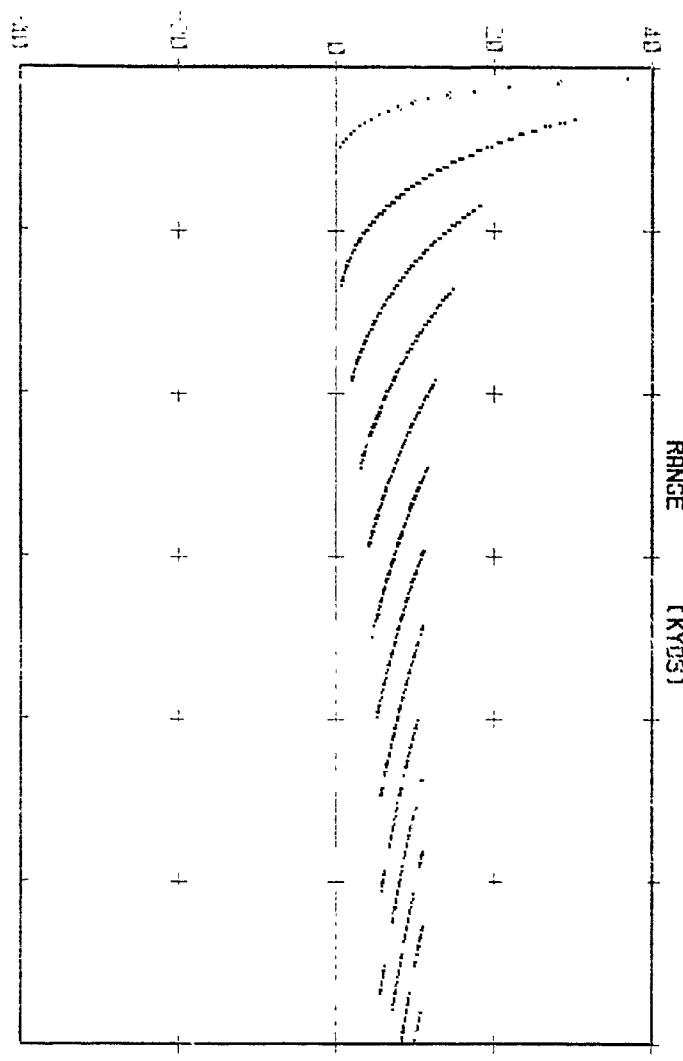
S 36° R 9842 F 78

1450 M/S 1500 1550

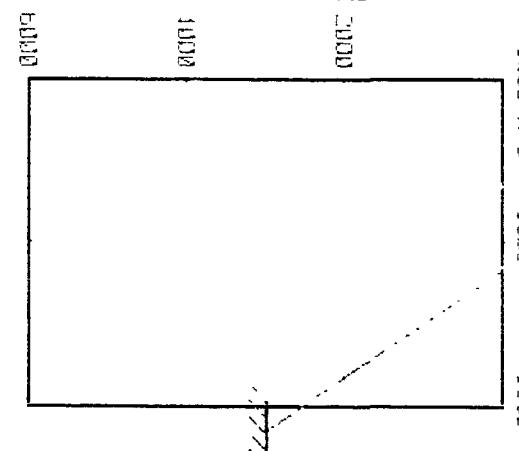
DR LOSS



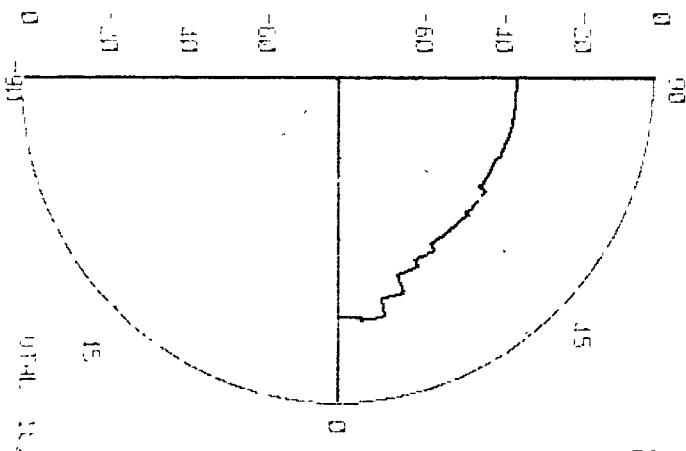
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

AREA 3B WINTER

S 20 R 64 F 153

1450 145 1530 1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

+

+

130
110
40
50 100 150 200 250 300

RANGE (KILOS)

DEPTH IN METERS

2000

4000

6000

8000

ARRIVAL ANGLE

-40

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NOISE (DB)

0

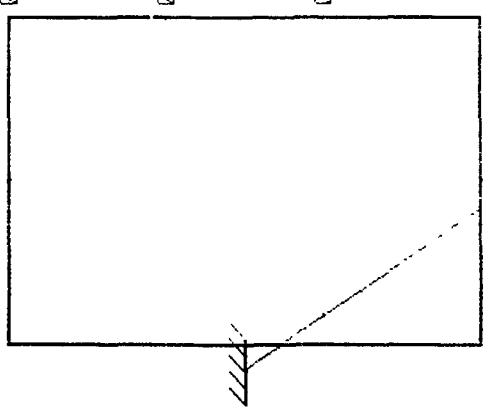
-20

-40

-60

-

-73-

20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90

0

-20

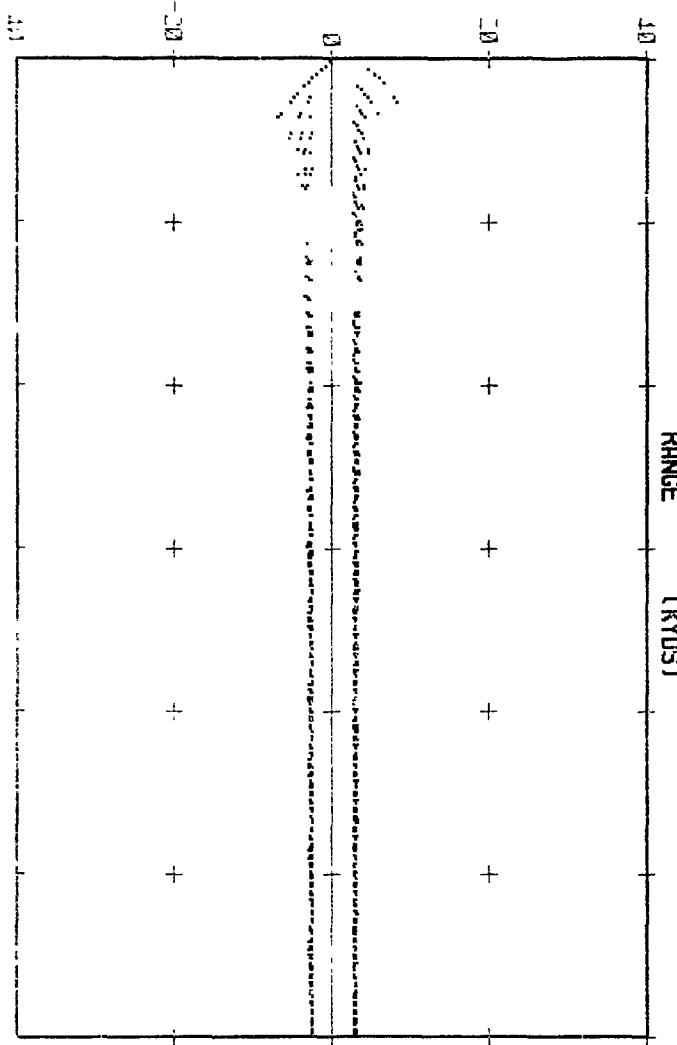
-40

-60

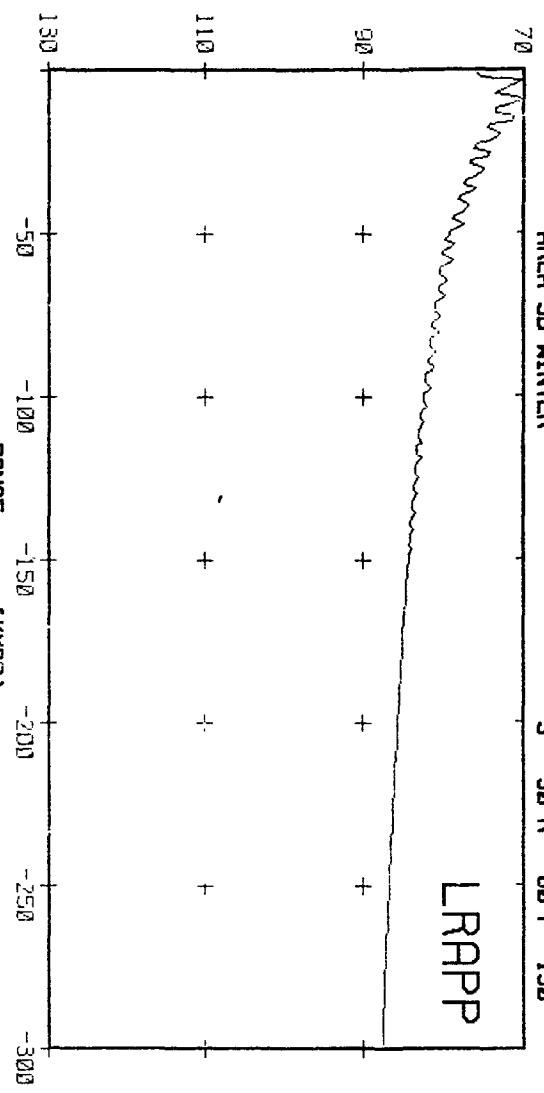
-80

-100

ARRIVAL ANGLE



DB LOSS



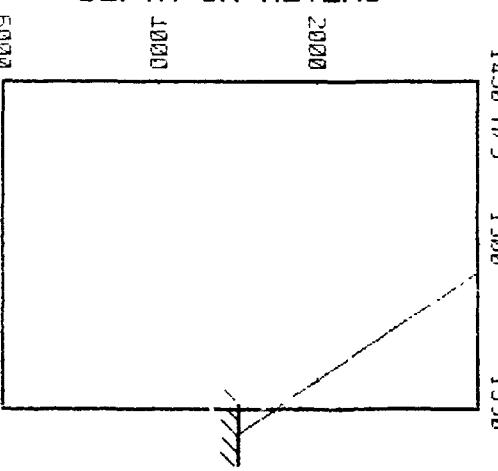
AREA 3B WINTER

S 50 R 60 F 150

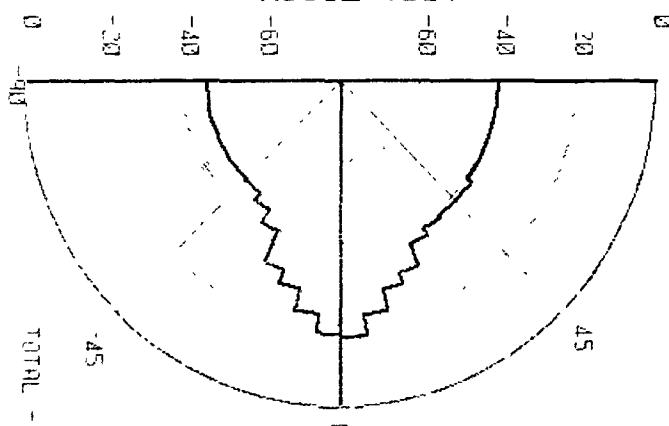
1450 M.S. 1500 1550

LRAAPP

DEPTH IN METERS



NOISE (DB)



D

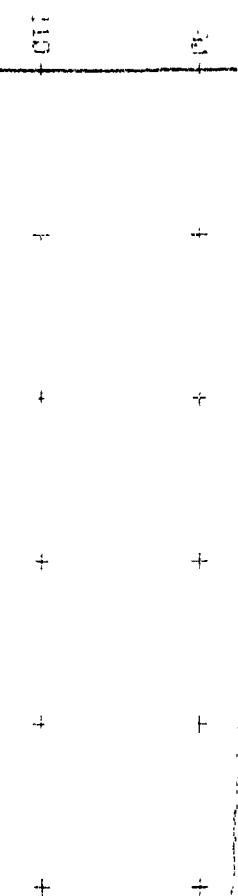
AREA 3B WINTER

S 300 R 60 F 150

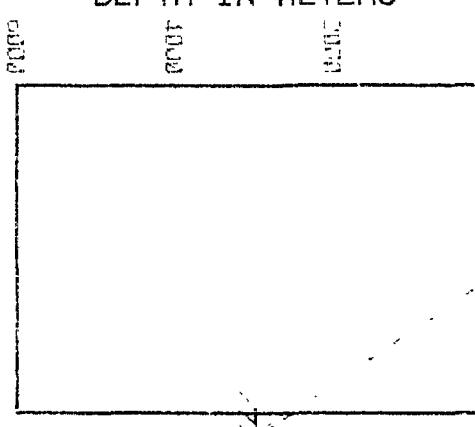
1456 m.s 150L
1550

LRAPP

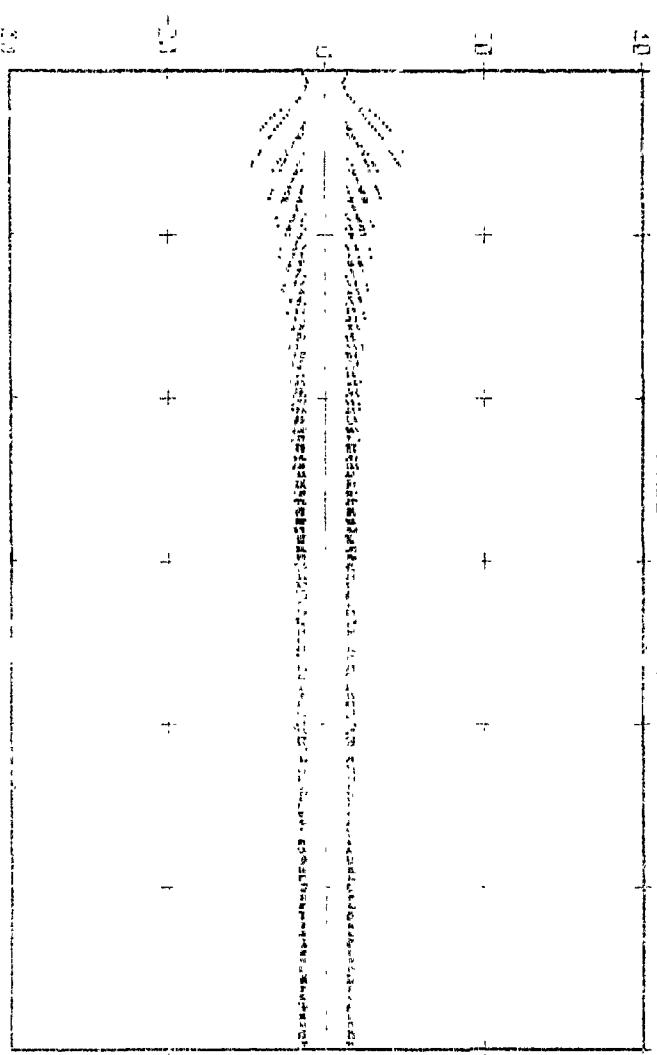
DB LOSS



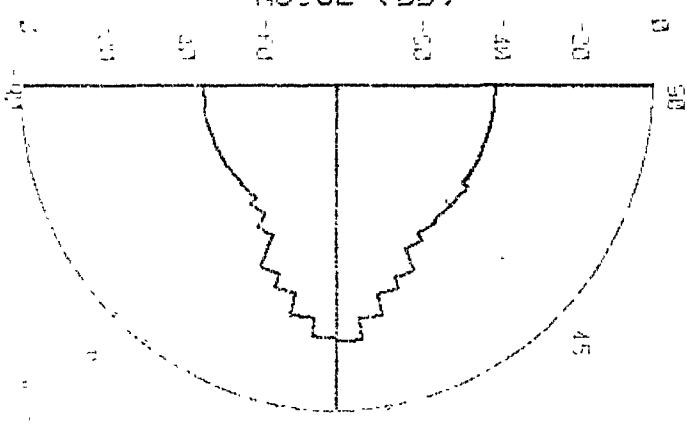
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

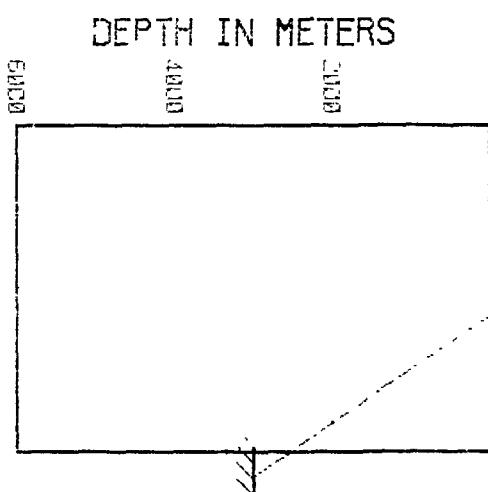
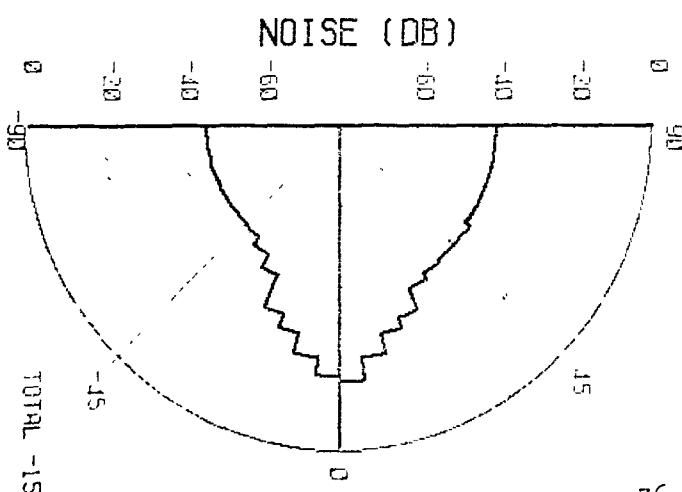
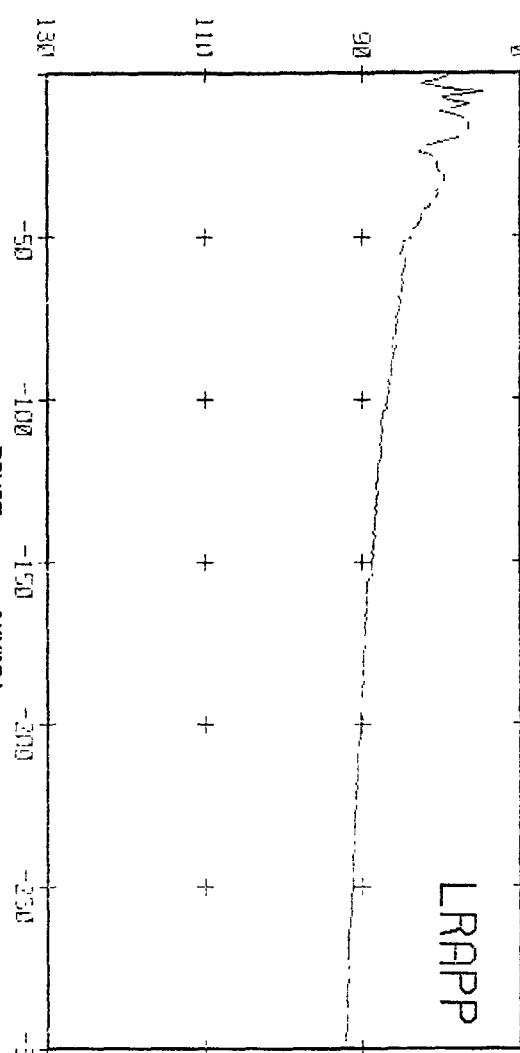
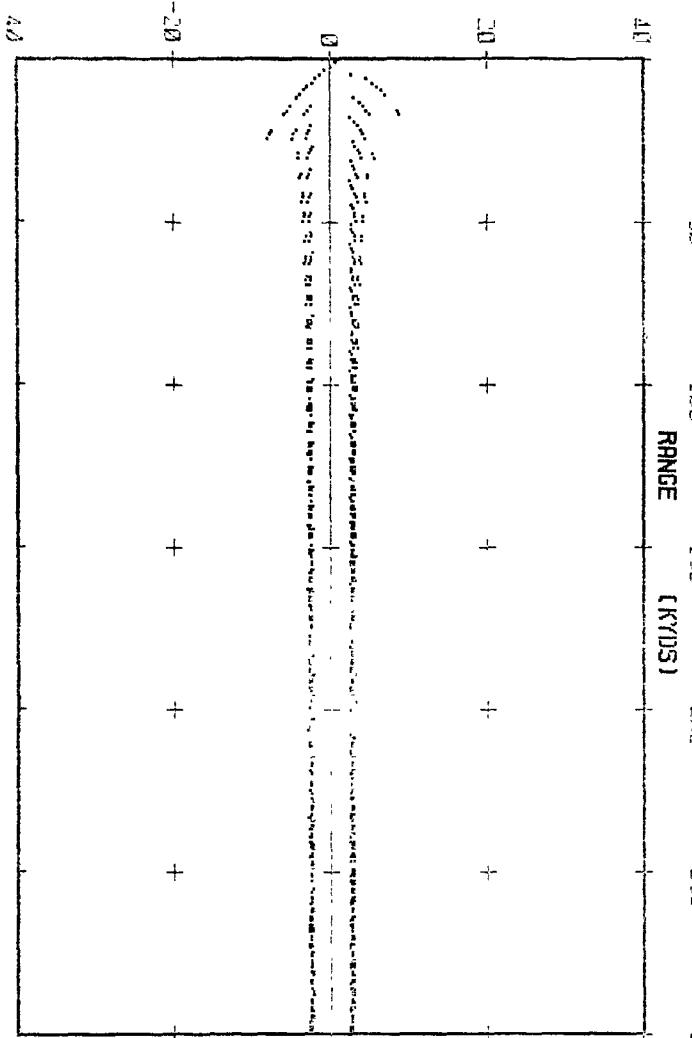




AREA 3B WINTER

S 20 R 166 F 159

1450 M, 5 1500 1550



70

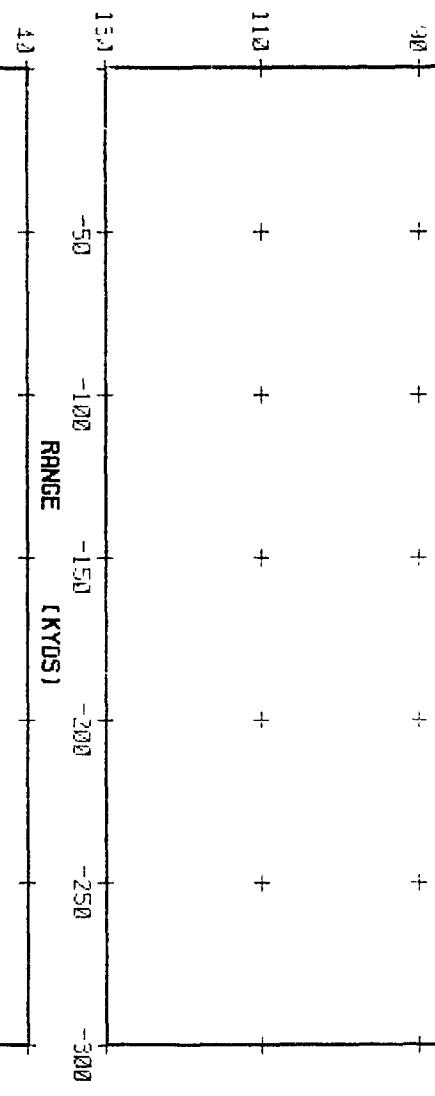
ARRA 3B WINTER

S 50 R 180 F 150

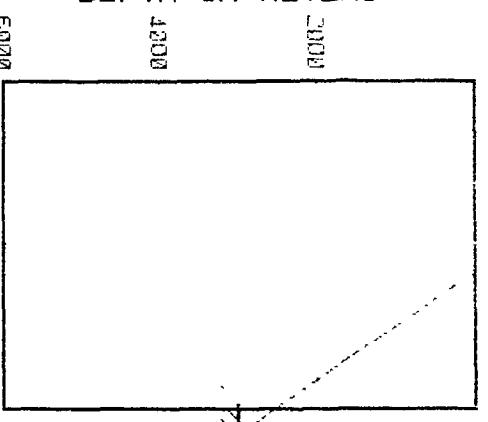
1450 115 1500 1550

LRAPP

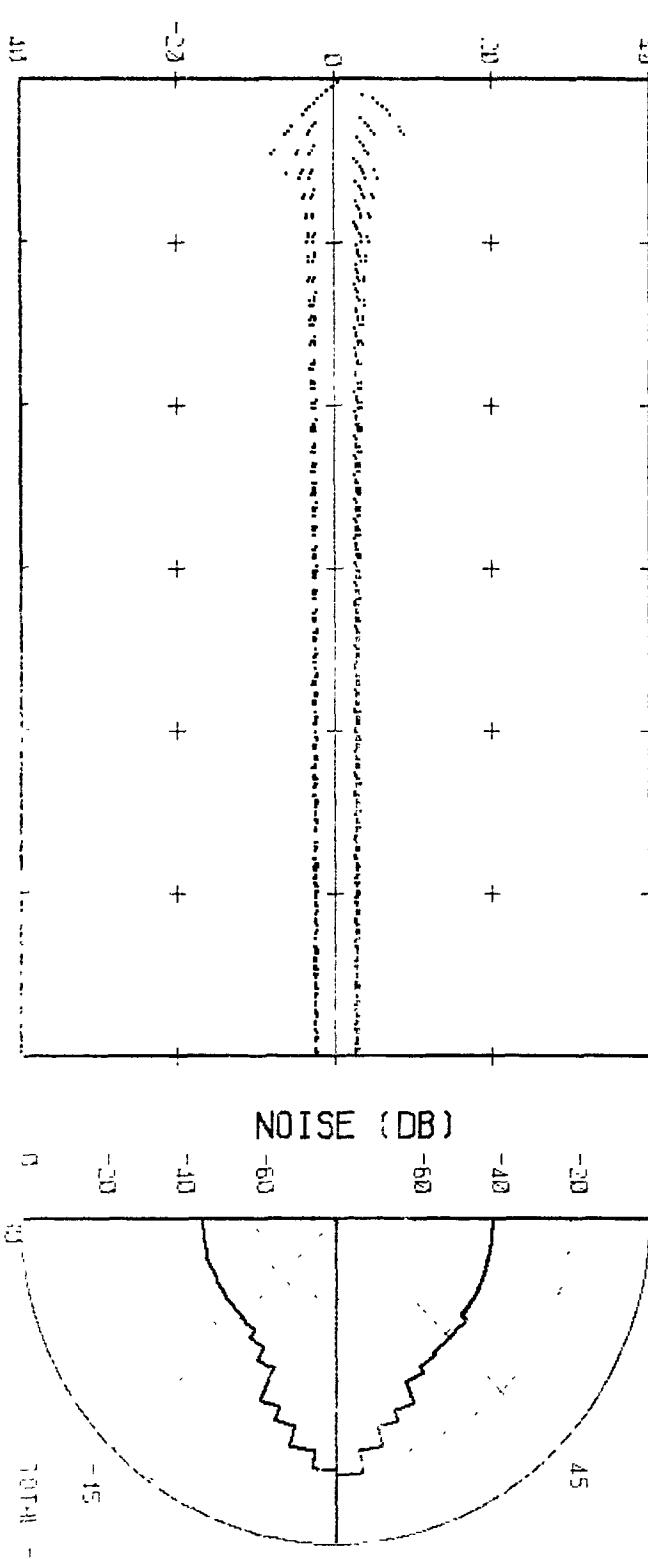
DB LOSS



DEPTH IN METERS



NOISE (DB)



70

AREA 3B WINTER

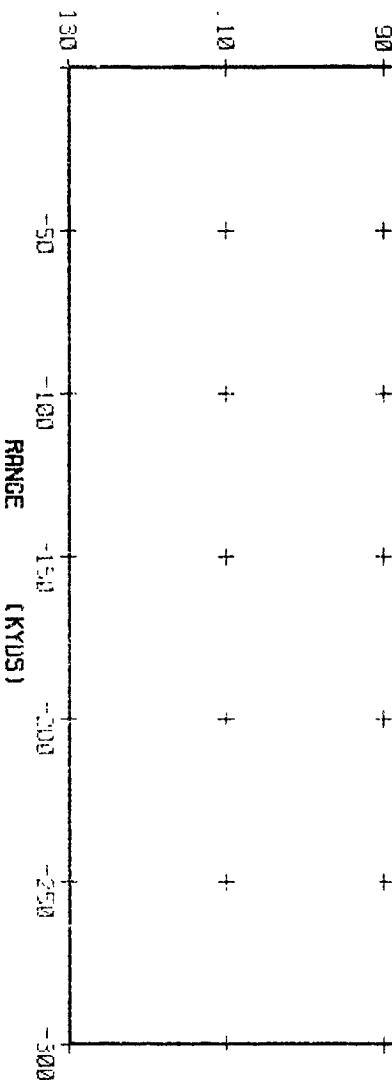
S 300 R 100 F 150

1450 145 1500 1550

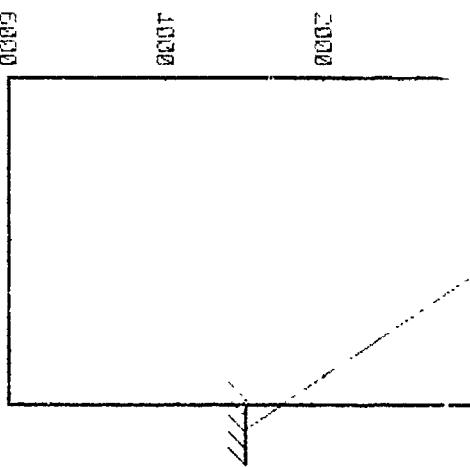


LRAPP

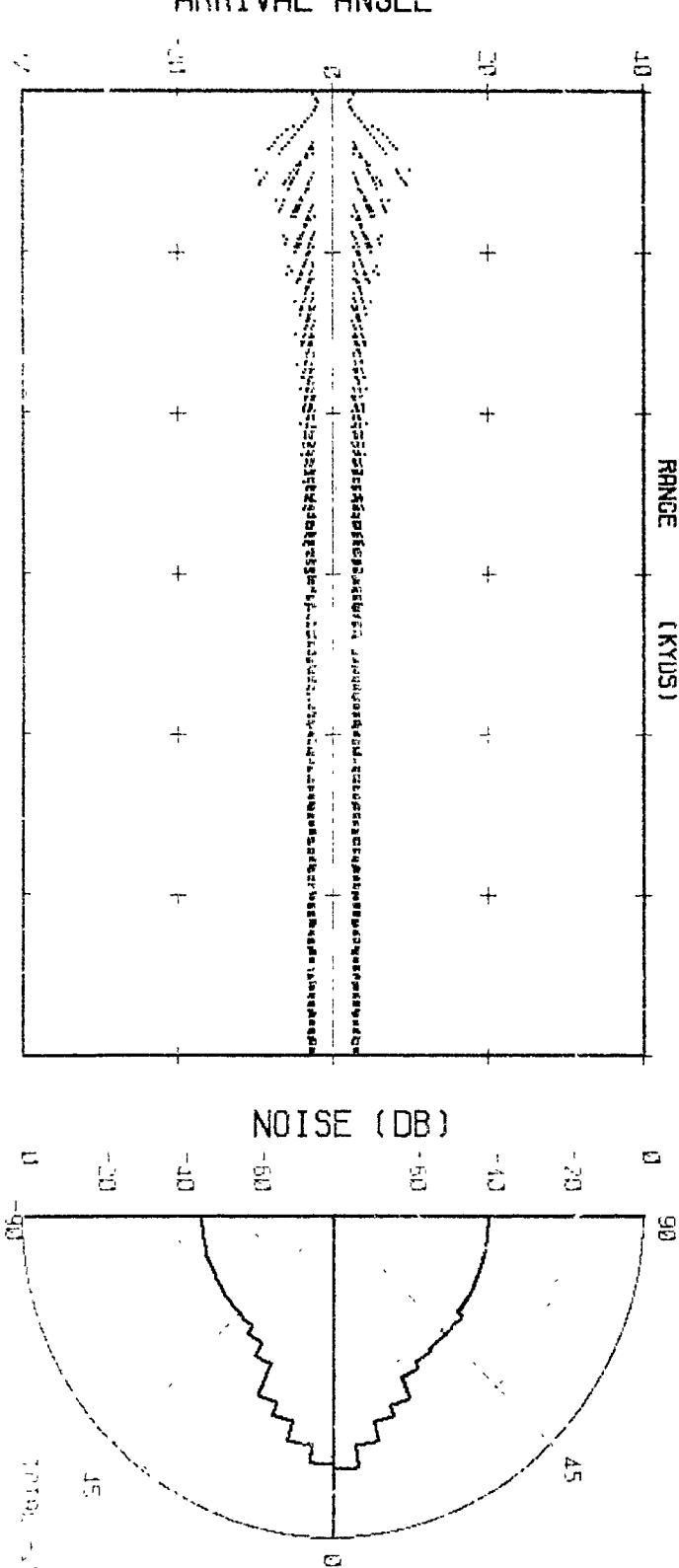
DB LOSS



DEPTH IN METERS



NOISE (DB)



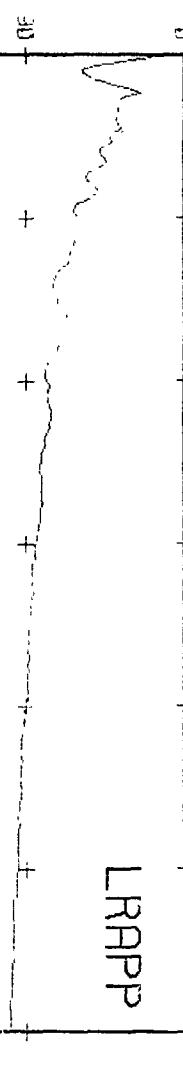
AREA 3B WINTER

S 20 R 300 F 150

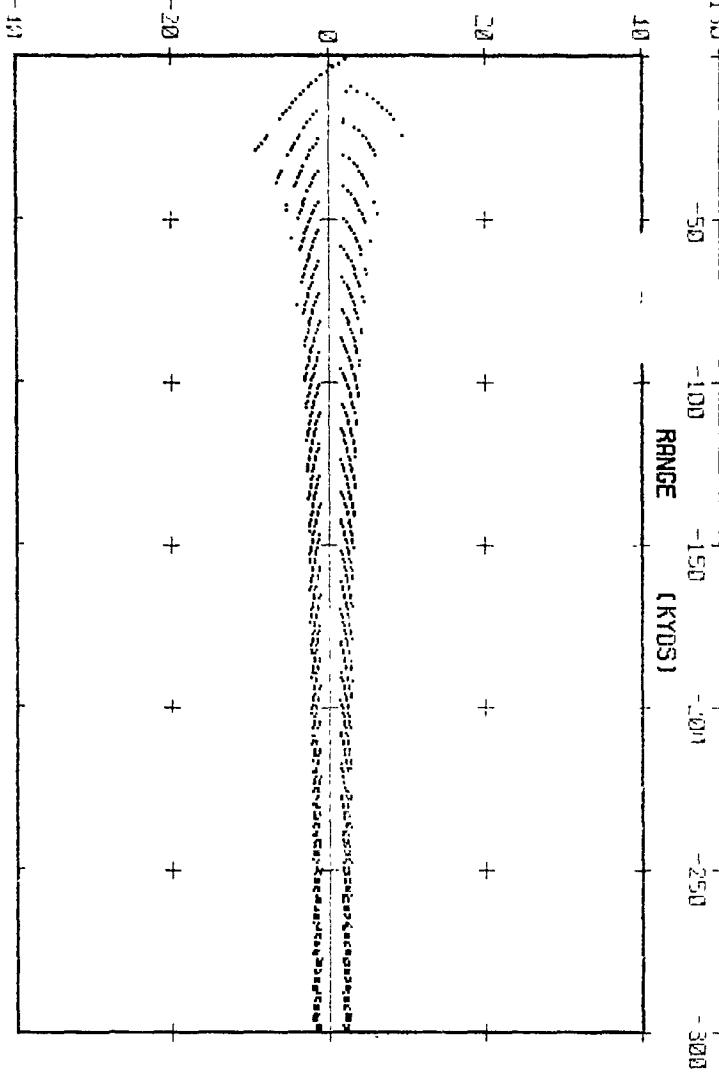
1450 1450 1500 1550

LRAAPP

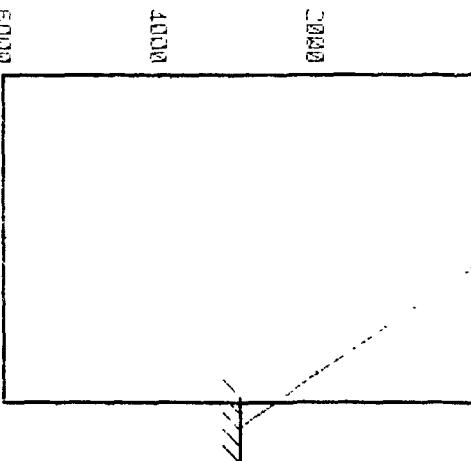
DB LOSS



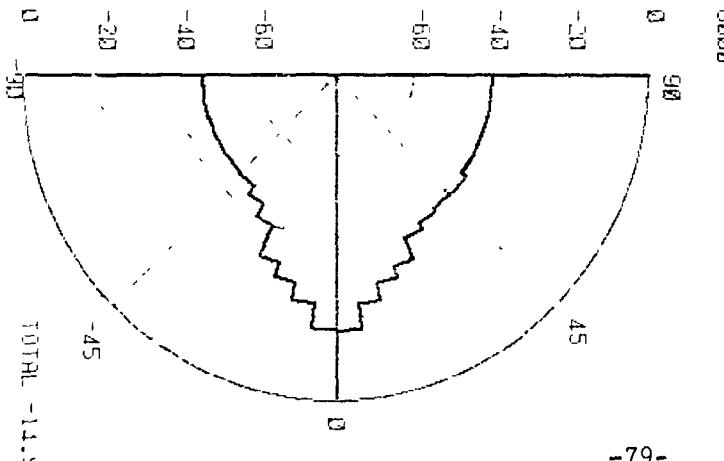
ARRIVAL ANGLE



DEPTH IN METERS

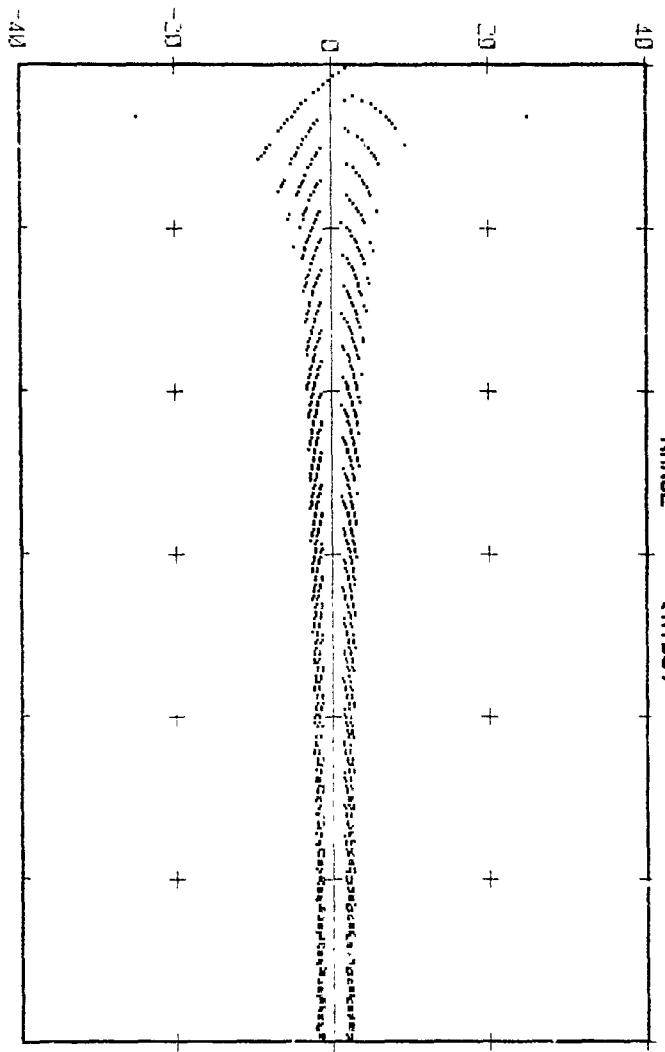


NOISE (DB)

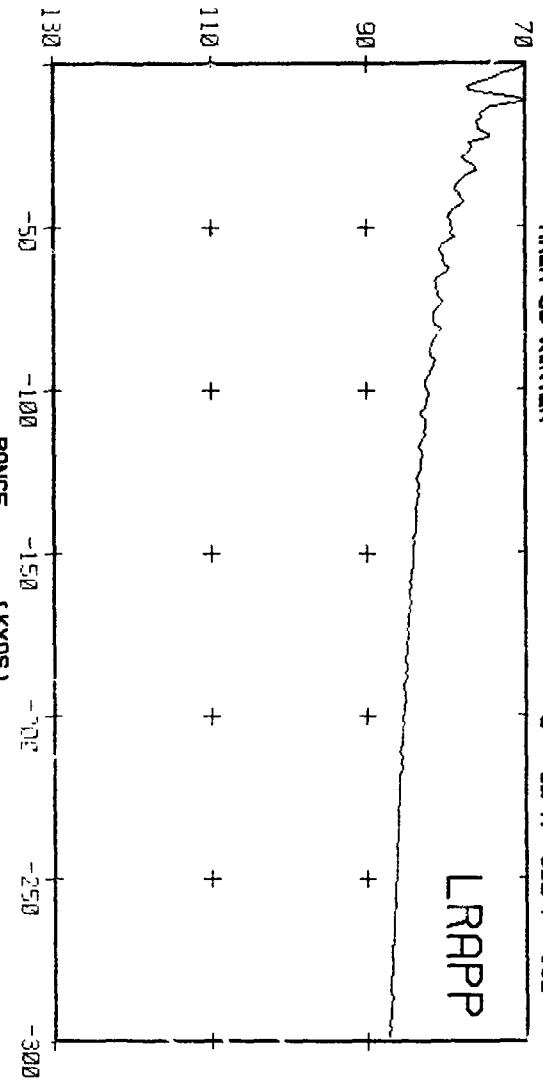


TOTAL -14.9 dB

ARRIVAL ANGLE



DB LOSS



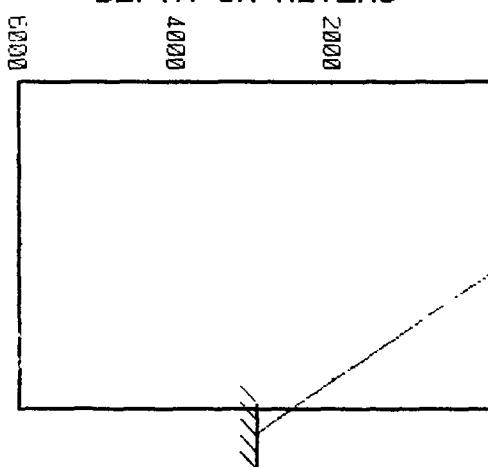
L RAPP

ARR 3B WINTER

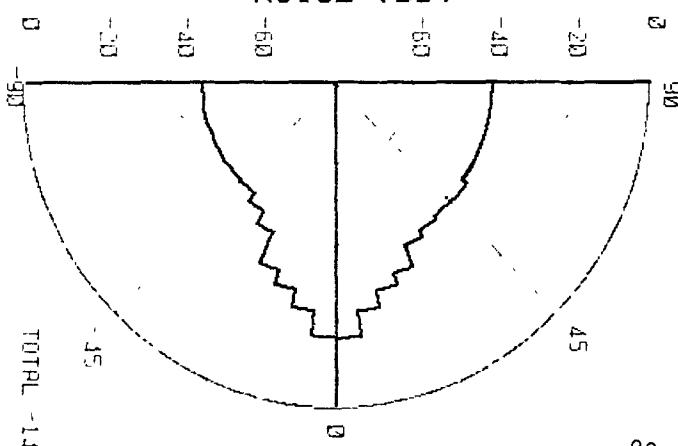
S 5A R 300 F 150

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)



TOTAL -14.5 DB

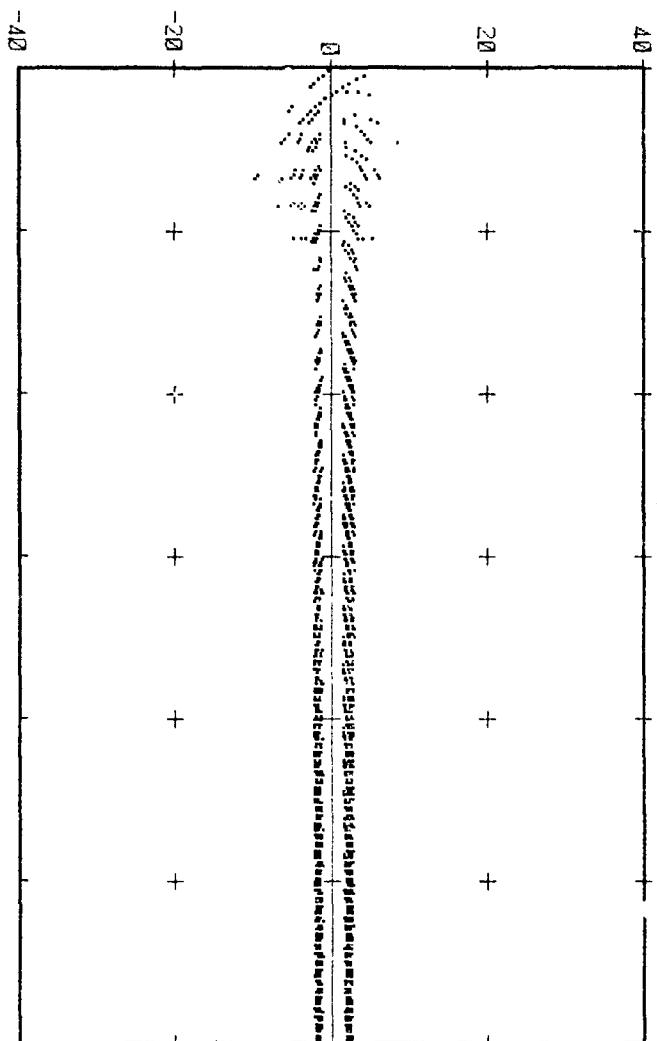
24

HREH 3B WINIEK

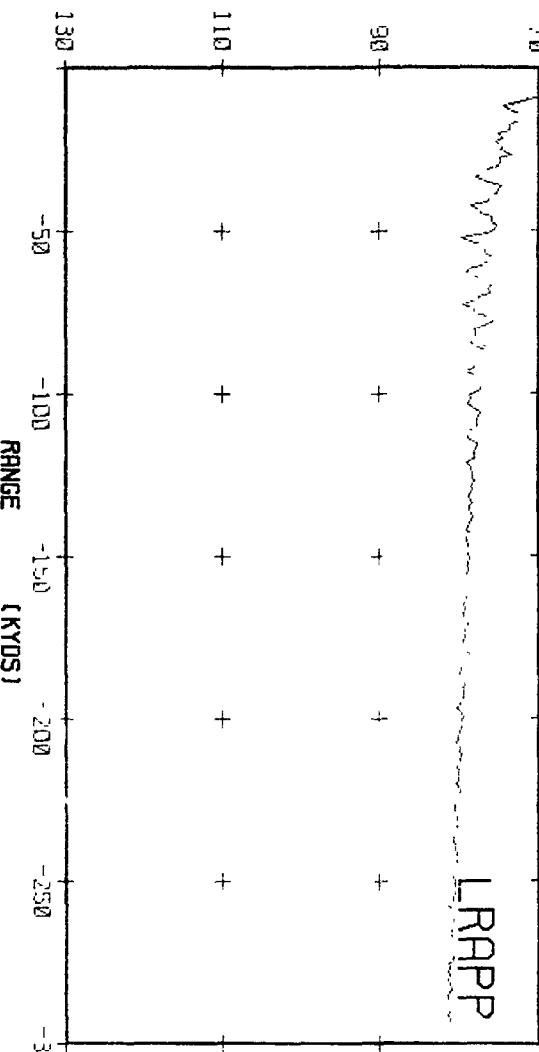
003 - 003 4 003 5

卷之三

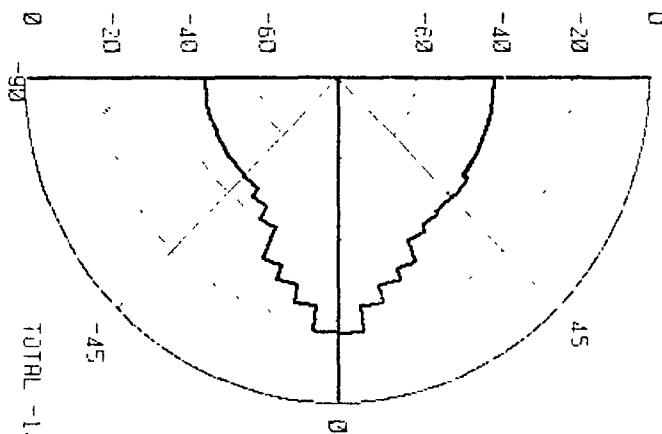
ARRIVAL ANGLE



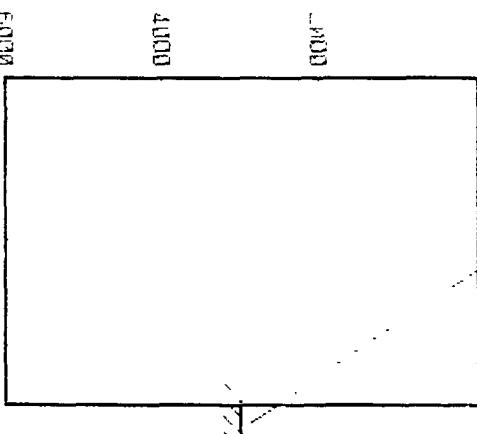
DB LOSS



NOISE (DB)



DEPTH IN METERS



AER 3B WINTER

S 20 R 500 F 154

1450 M/S 1500 1550

LRAPP

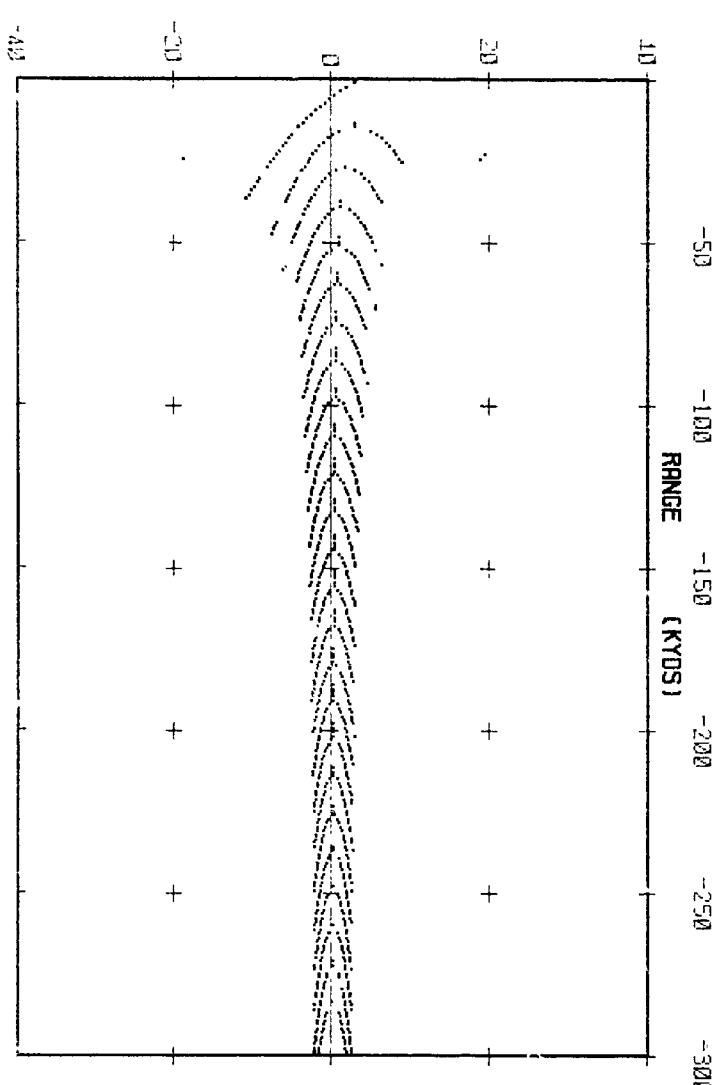
DB LOSS



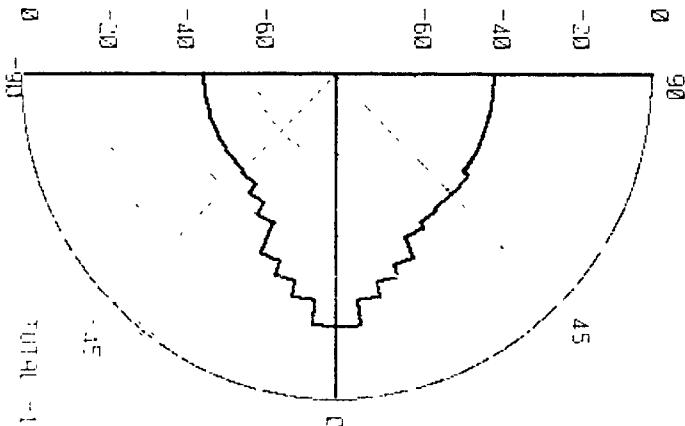
DEPTH IN METERS

2000 4000 5000

ARRIVAL ANGLE



NOISE (DB)



0 15 30 45 60 75 90

70

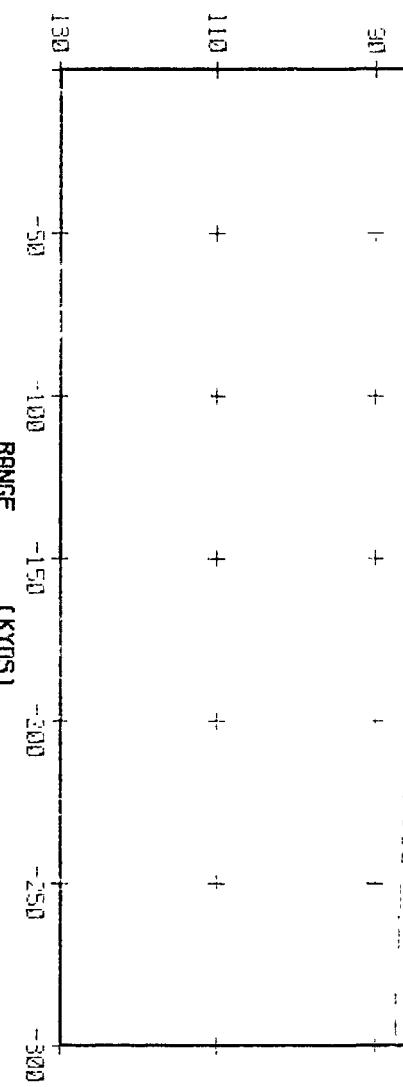
AREA 3B WINTER

S 53° R 56° F 150

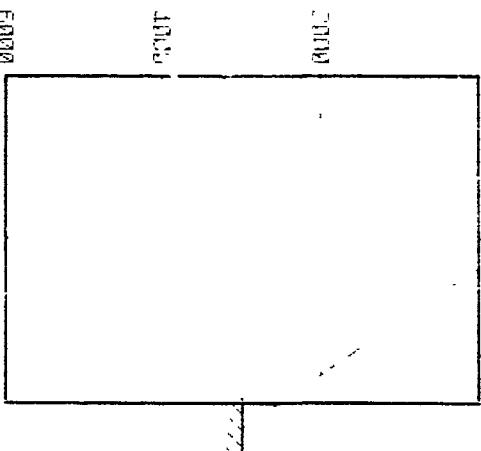
1450 11 5 1500 1550

LRAPP

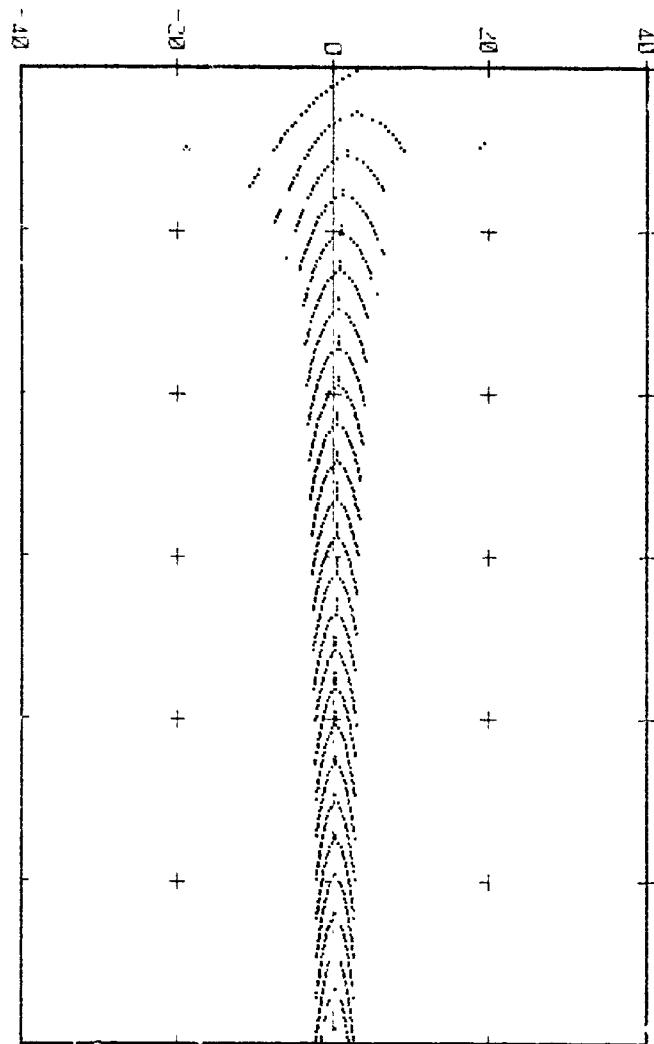
DB LOSS



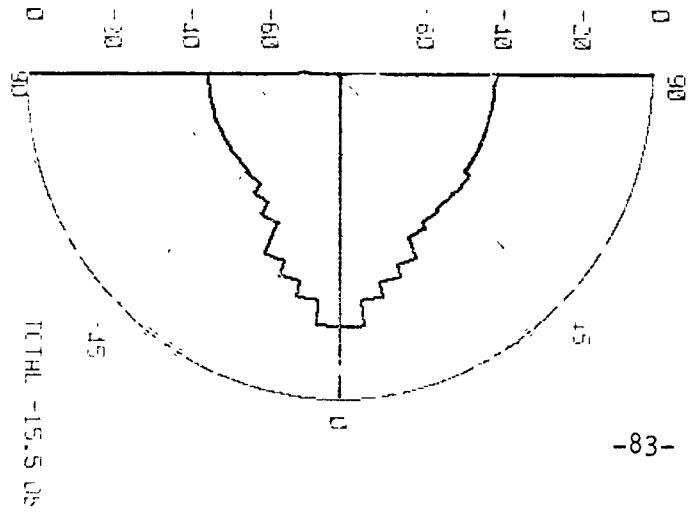
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TUTHL -15.5 dB

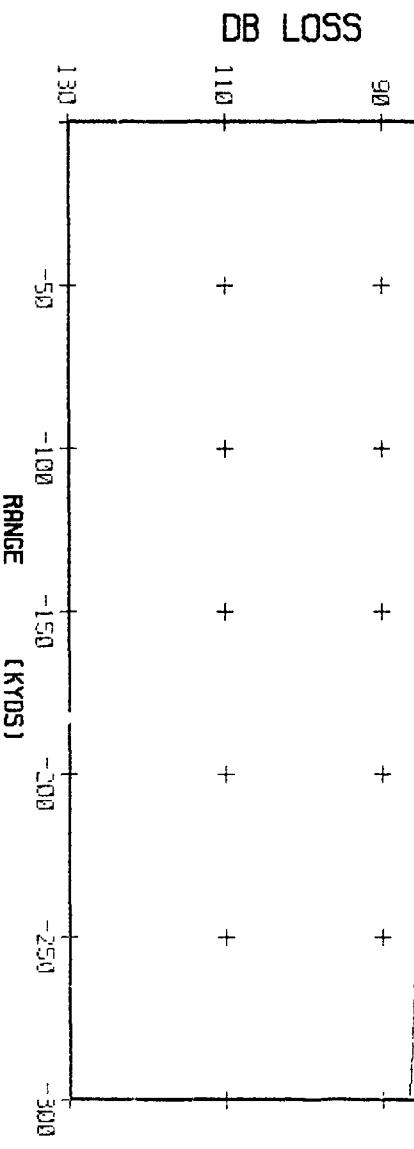
AREA 3B WINTER

S 300 R 500 F 150

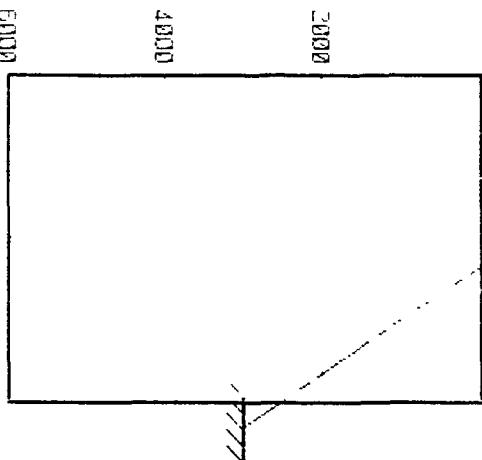
1450 11/5 1506 1559



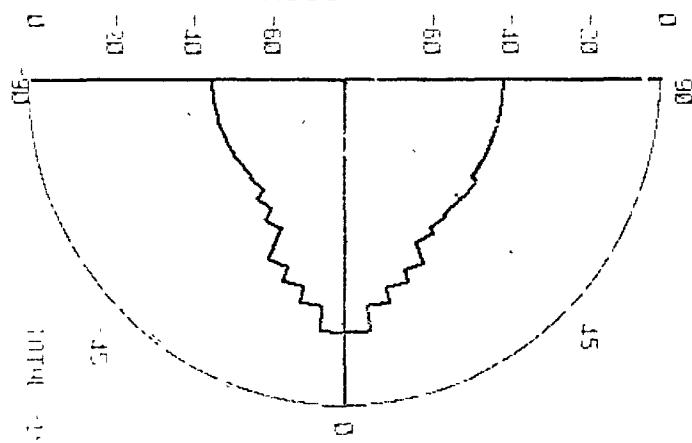
LRAPP



DEPTH IN METERS



NOISE (DB)



70

PIKA SB WINTER

S 20 R 100 F 15M

145.1 H 14.00 155.0

LRFPP

DB LOSS

110

+

+

+

+

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130

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40

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20

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ARRIVAL ANGLE

0

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-50

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-100

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-150

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440

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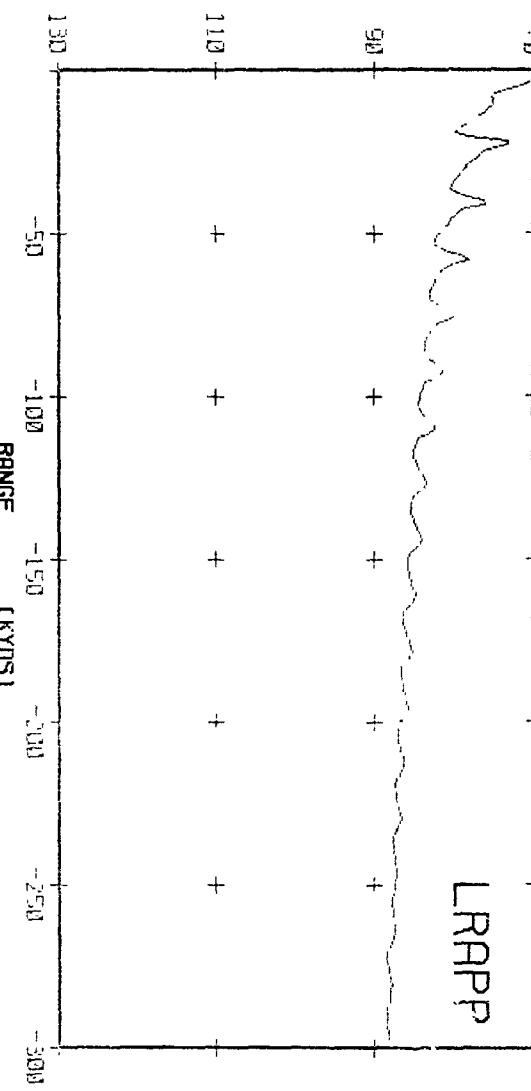
AREA 3B WINTER

S 50 R 1000 F 150

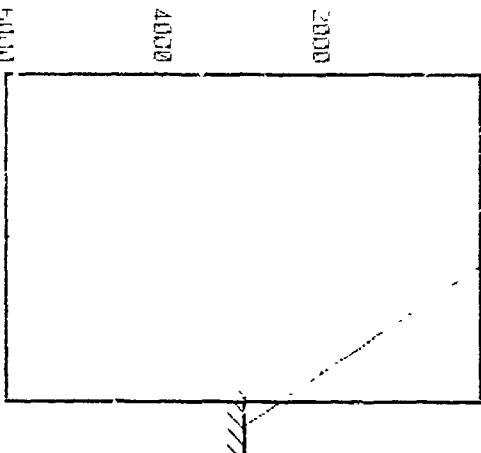
1450 115 1500 1550

LRAFP

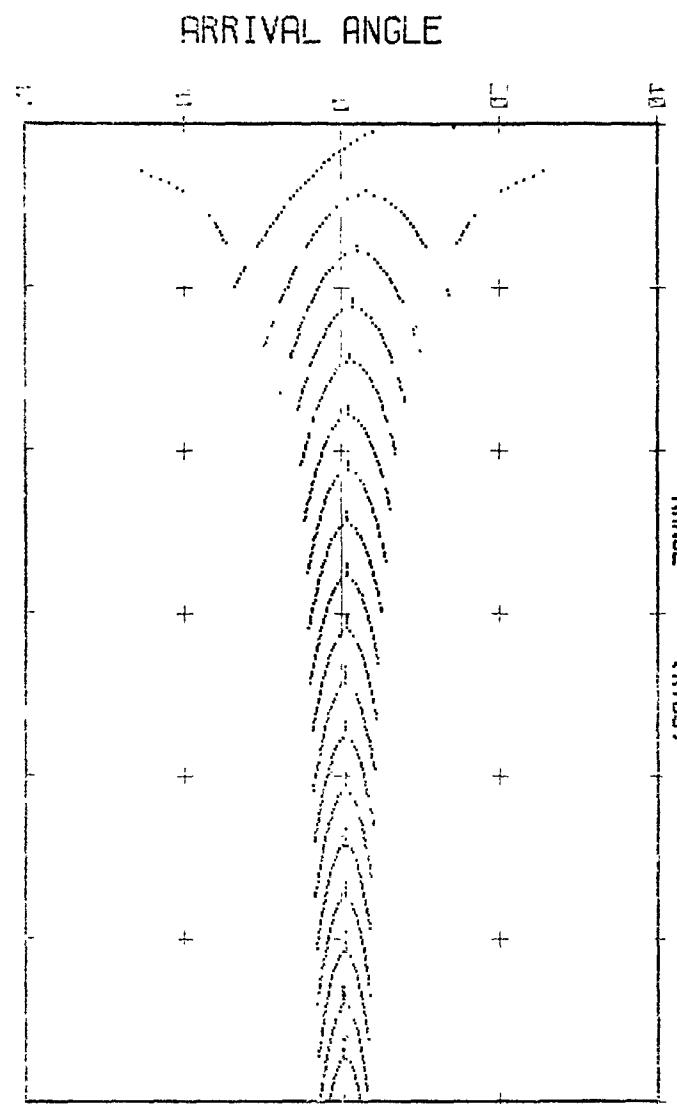
DB LOSS



DEPTH IN METERS



NOISE (DB)



RIVER 3B WINTER

S 32° R 103° F 154

1450 H.S. 1500 1550

LRFPP

DB LOSS

70

50

30

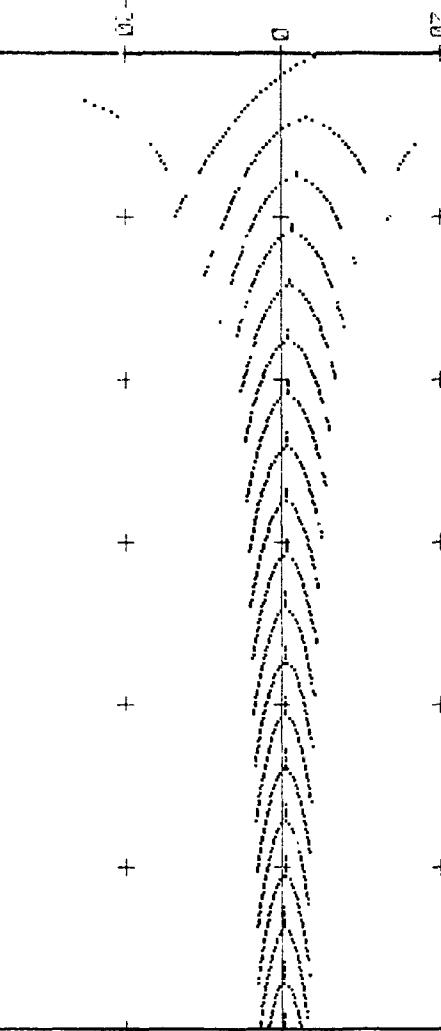
10

0

Copy available to DDC does not
permit fully legible reproduction

ARRIVAL ANGLE

RANGE (KILOMETERS)



DEPTH IN METERS

5000

4000

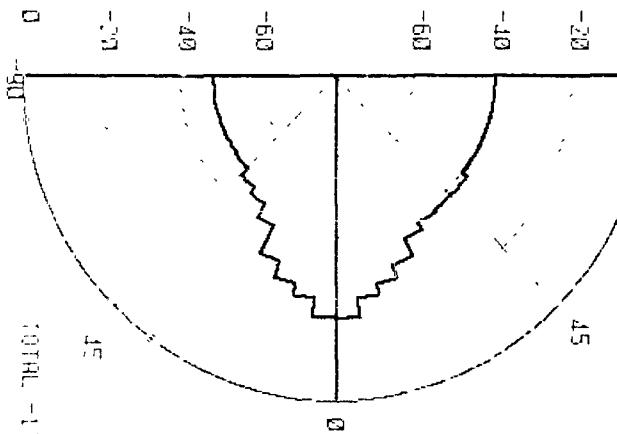
3000

2000

1000

0

NOISE (DB)

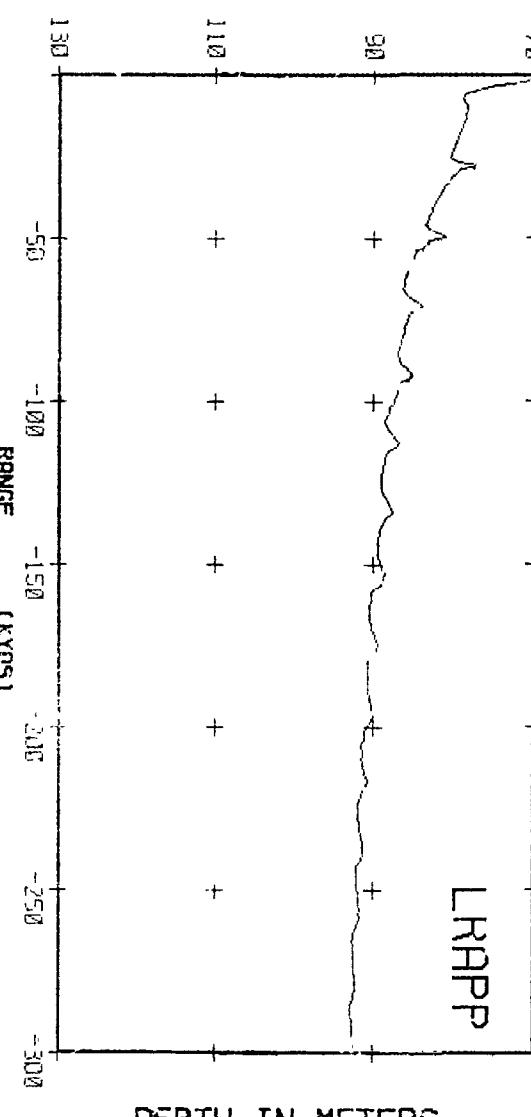


AREA 3B WINTER

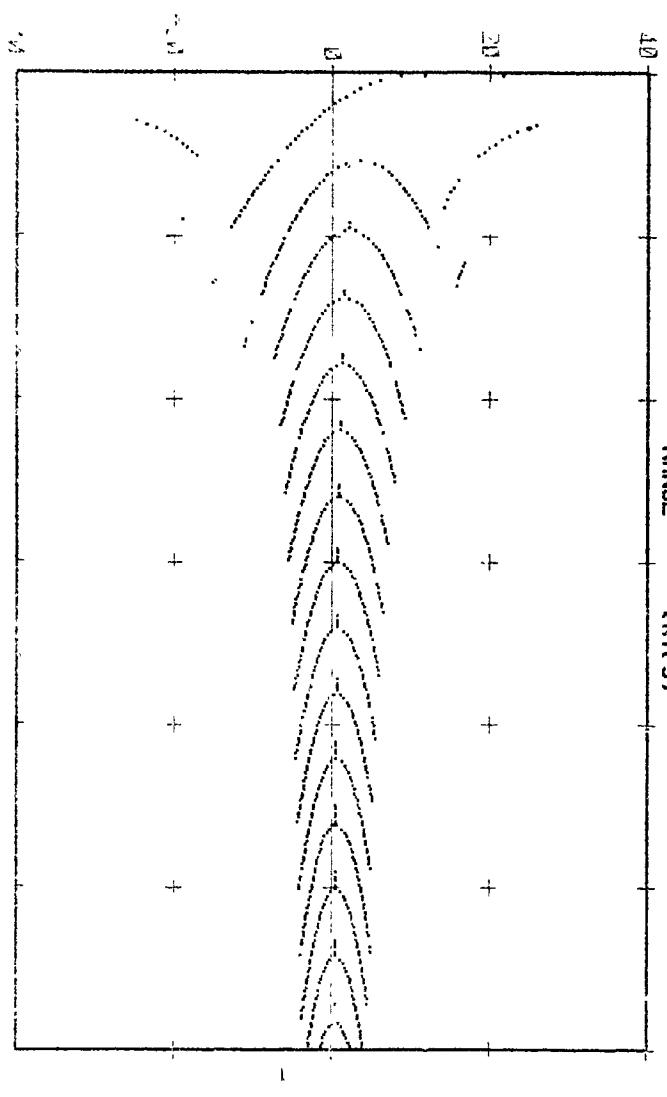
S 20 R 1500 F 150

1450 M/S 1500 1550

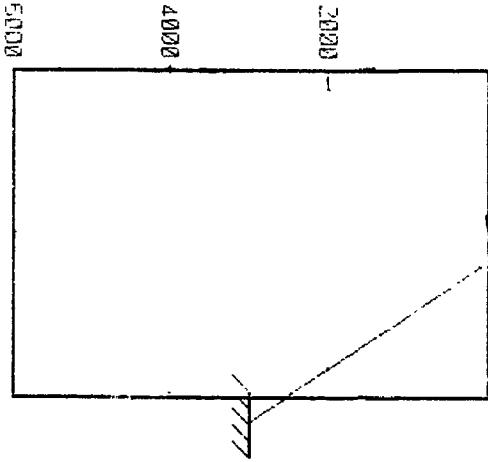
DB LOSS



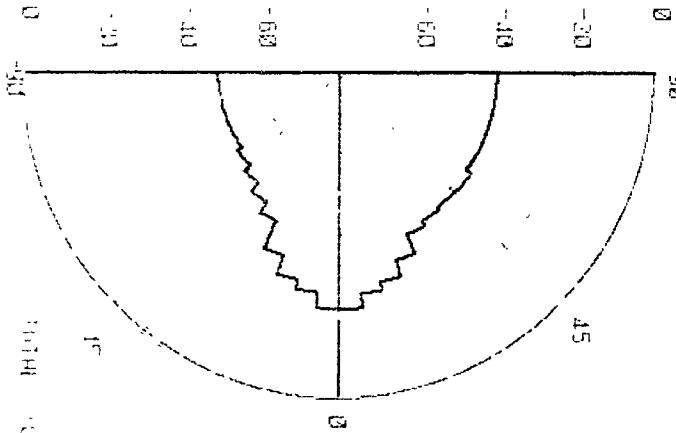
ARRIVAL ANGLE



DEPTH IN METERS



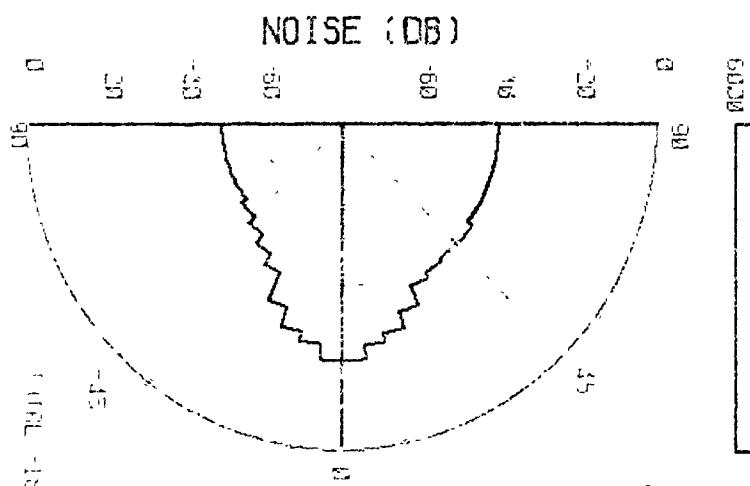
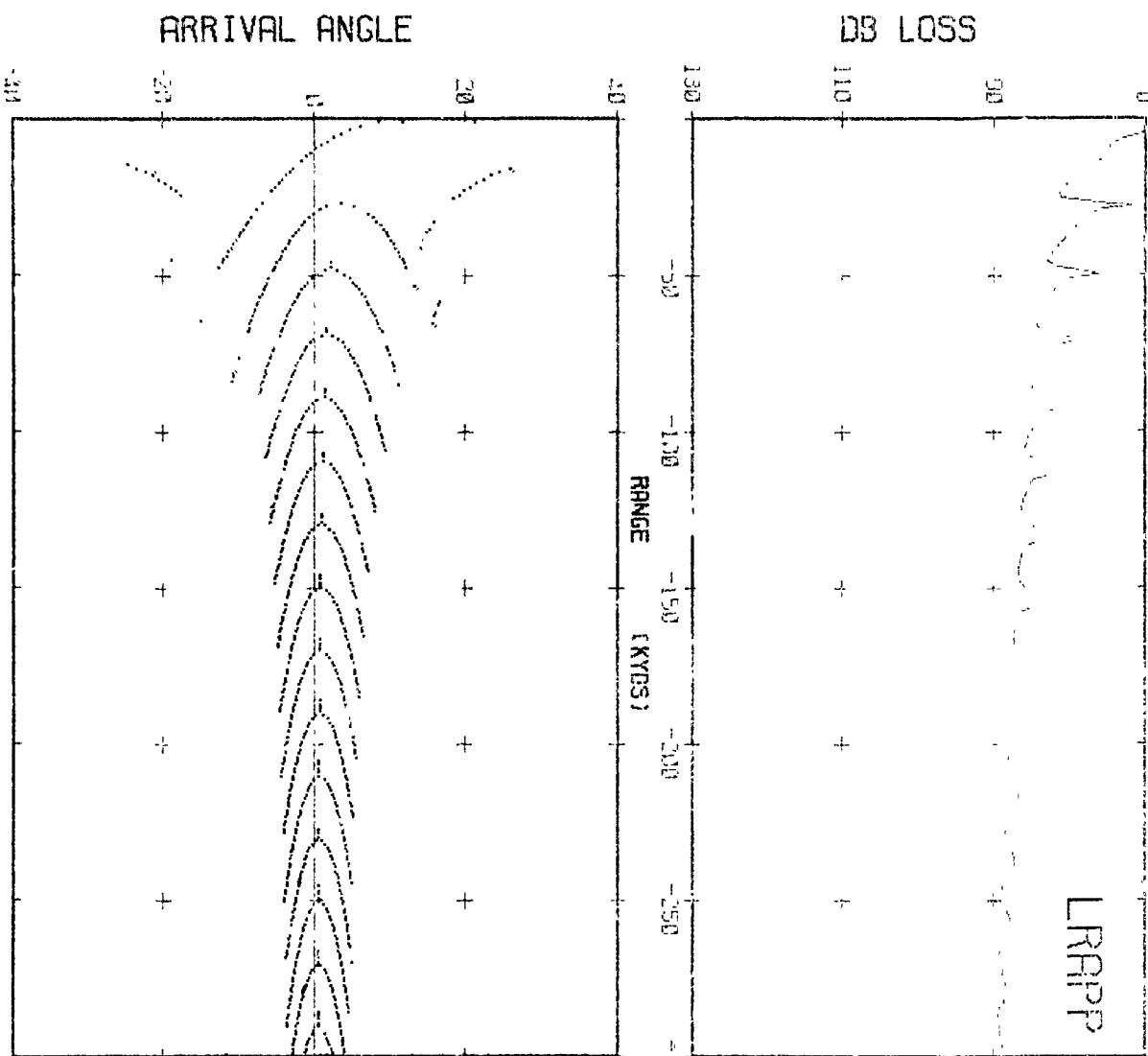
NOISE (DB)



PREH 38 MINTEK

S 53 R 1569 F 158

1454 11 3 1583 1552



70

ARER 3B WINTER

S 300 R 1500 F 150

1450 M/S

1500

1550

LRAPP

DB LOSS

130
110
90
70

-100 -150 -200 -250 -300

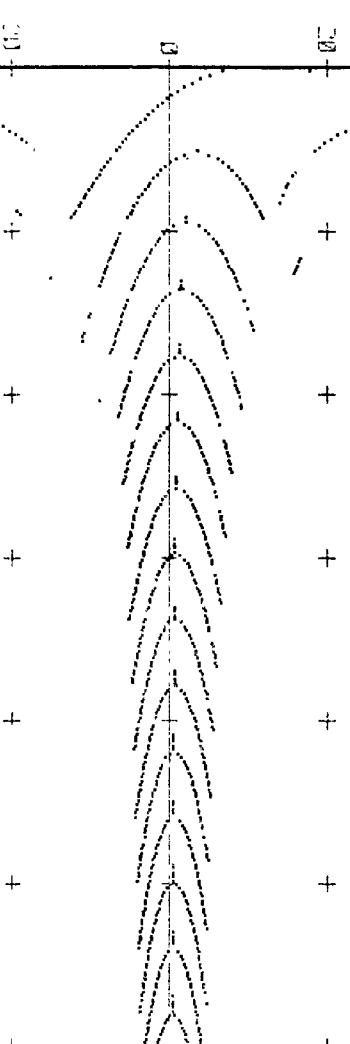
0
3000
4000

DEPTH IN METERS

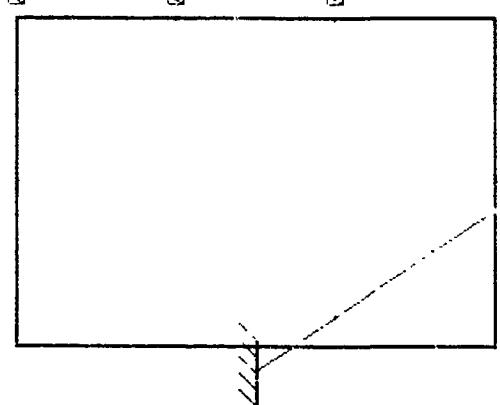
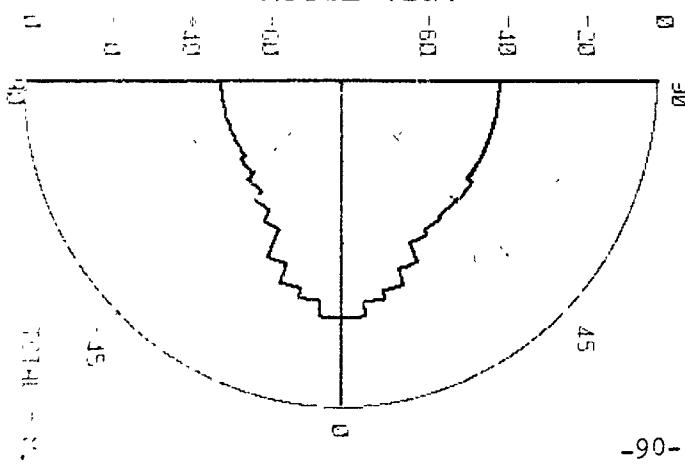
4000

3000

ARRIVAL ANGLE



NOISE (DB)



70

AREA 3B WINTER

S 20 R 6000 F 150

1450 1455 1500 1550

90

DB LOSS

110

130

150

170

190

210

230

250

270

290

310

330

350

370

390

410

430

450

470

LRAPP

L

R

A

P

P

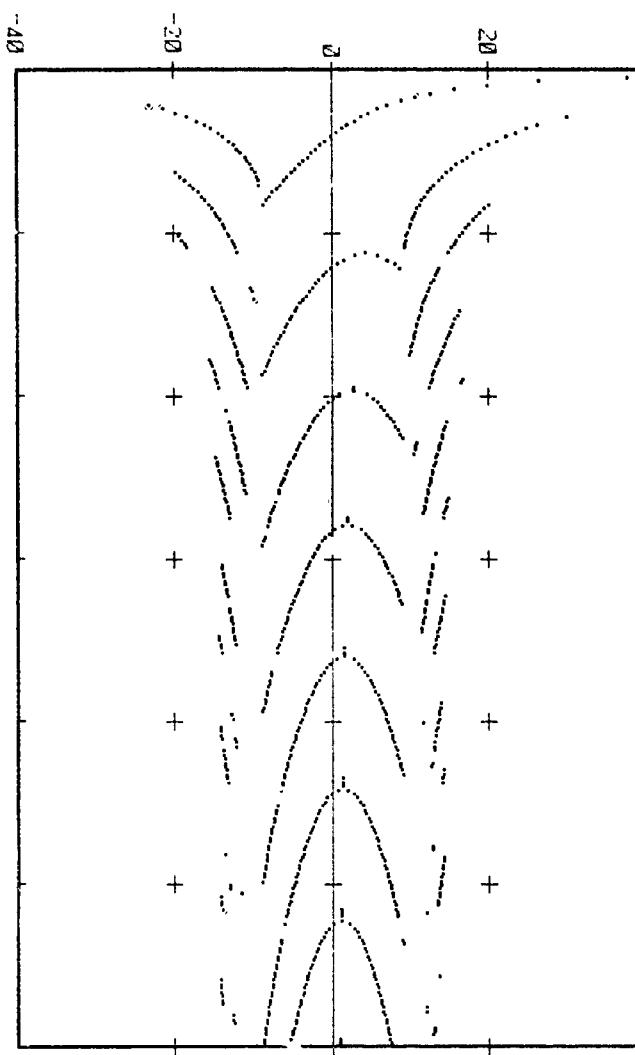
P

P

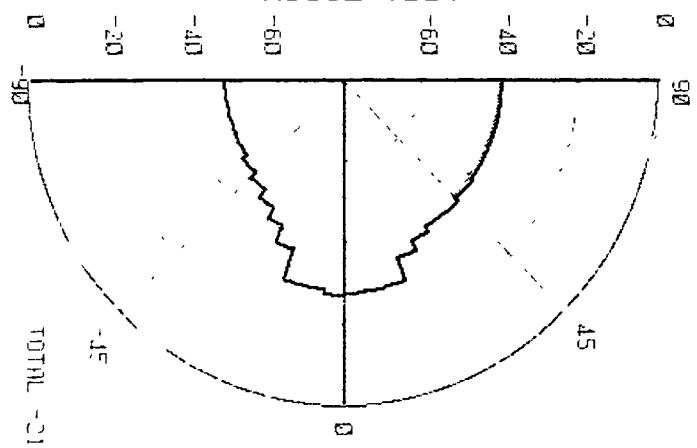
P

P

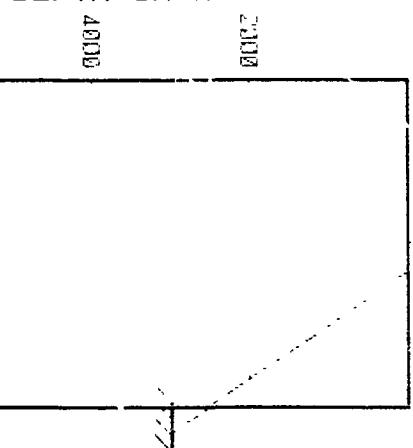
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS

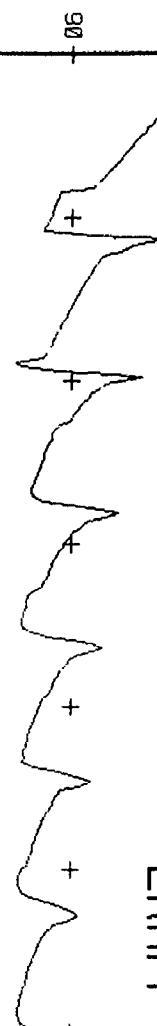


70

ARR 3B WINTER

S 50 R 6000 F 150

1450 M/S 1500 1550



LRAPP

130
110
90
70-50
-100
-150
-200
-250
-300

RANGE (KMDS)

DEPTH IN METERS

2000

4000

6000

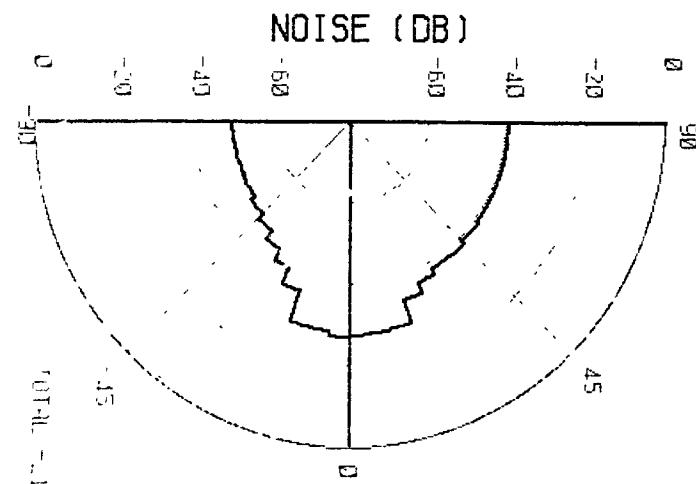
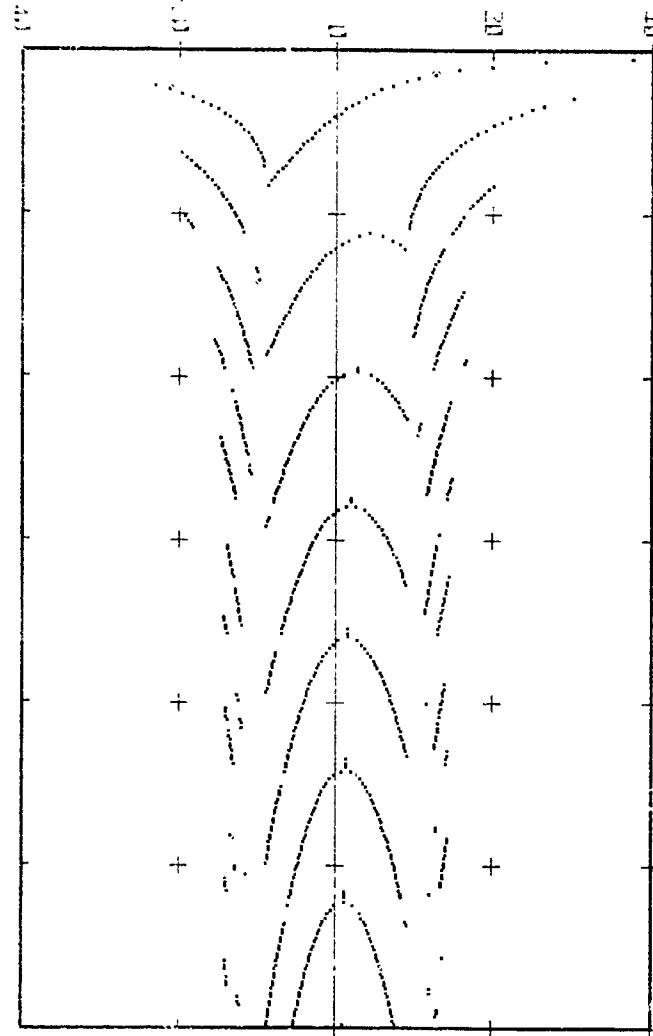
8000

90

0

-92-

ARRIVAL ANGLE



0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

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-1100

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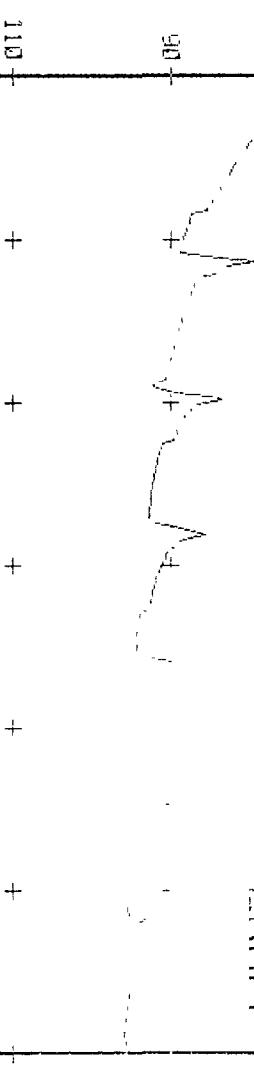
70

AREA 3B WINTER

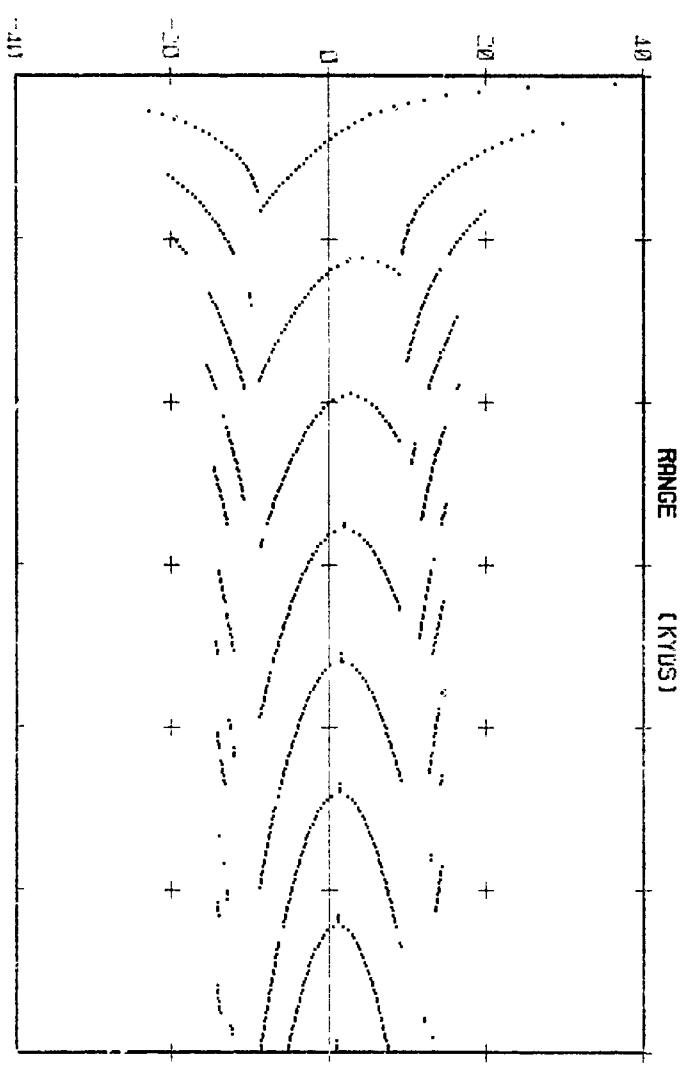
S - 3 R 6000' 1550

1500 1550 1550

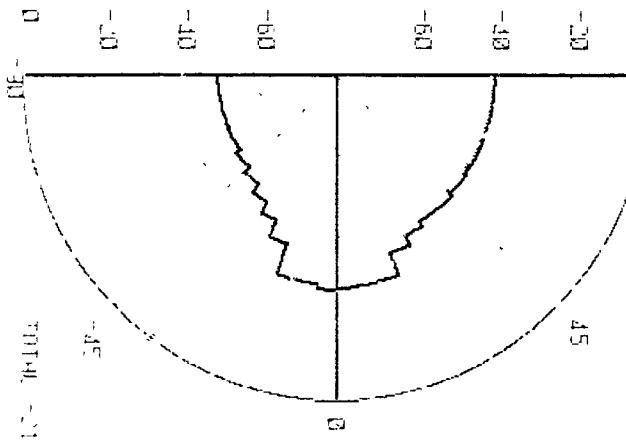
DB LOSS



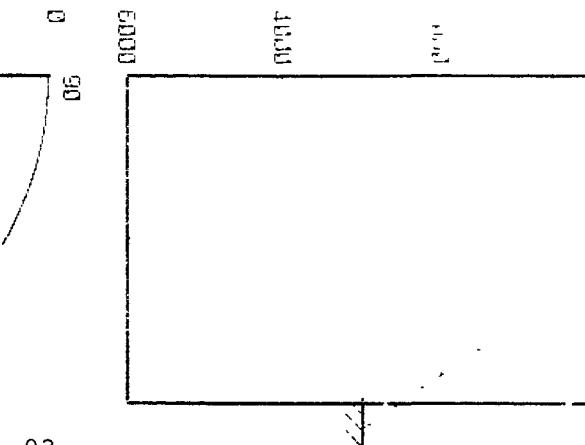
ARRIVAL ANGLE

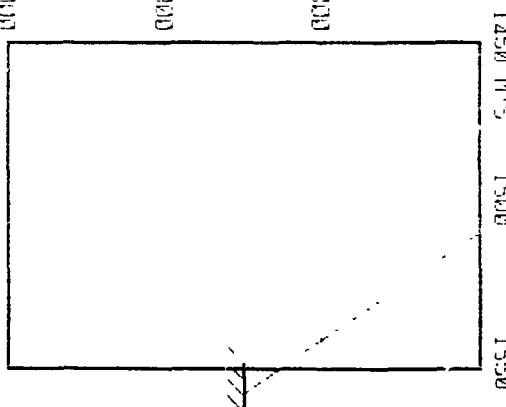
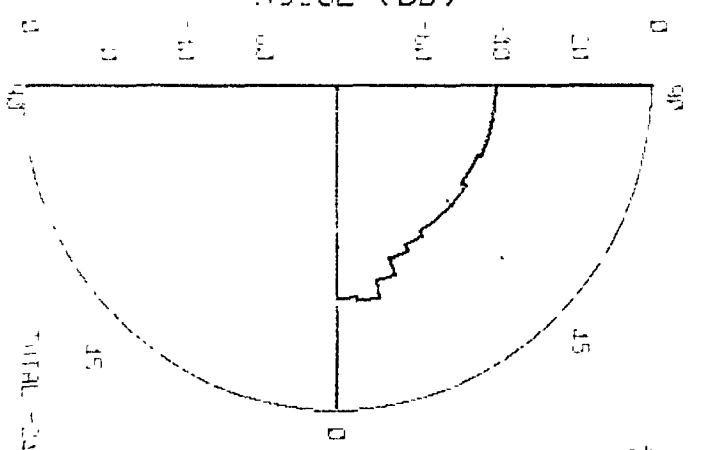
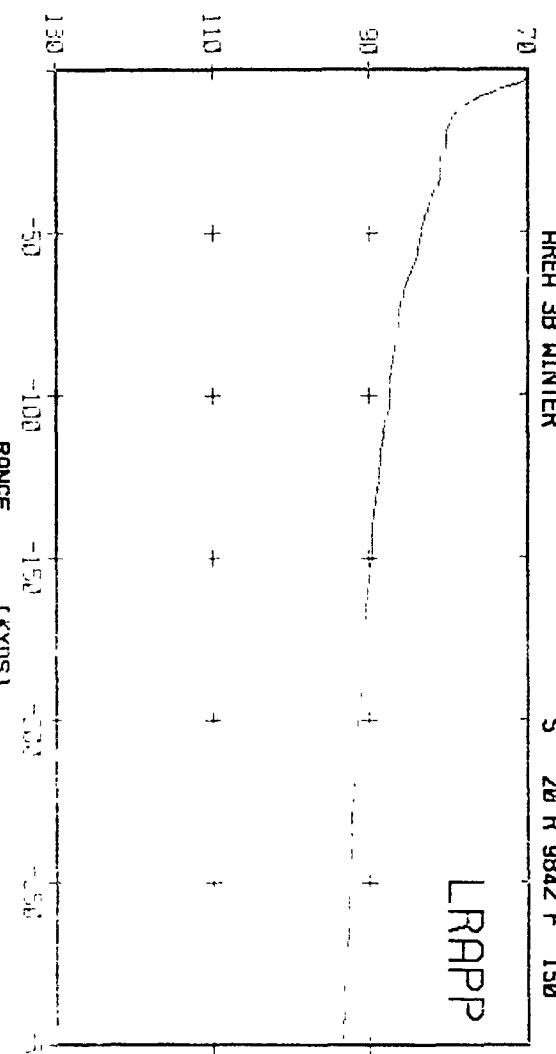
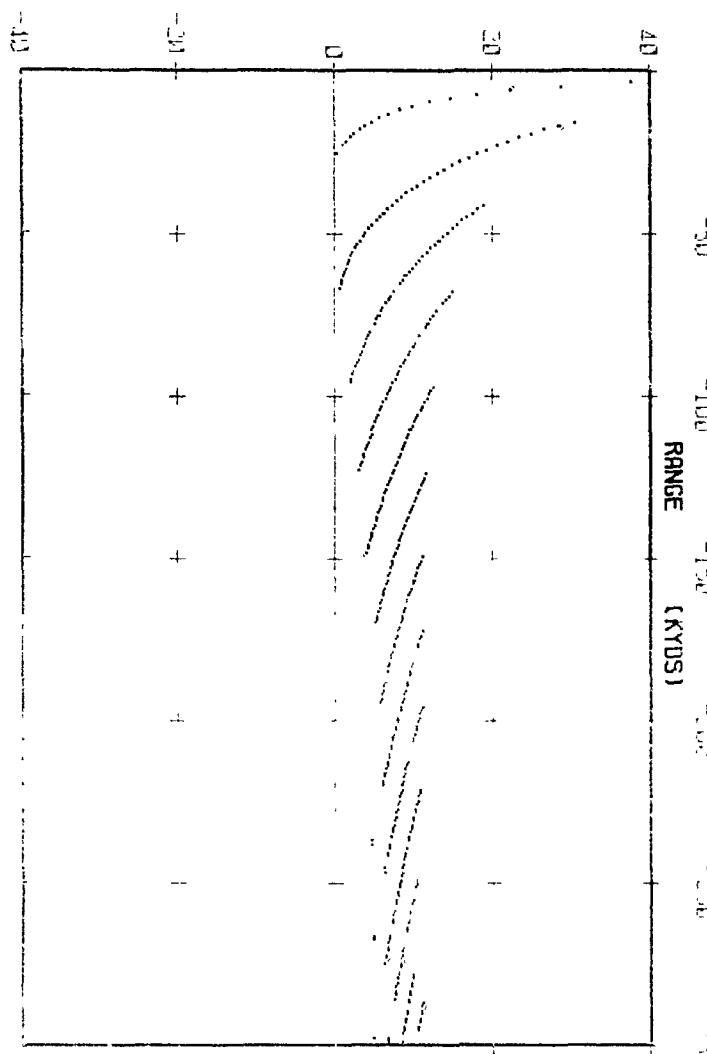


NOISE (DB)



DEPTH IN METERS





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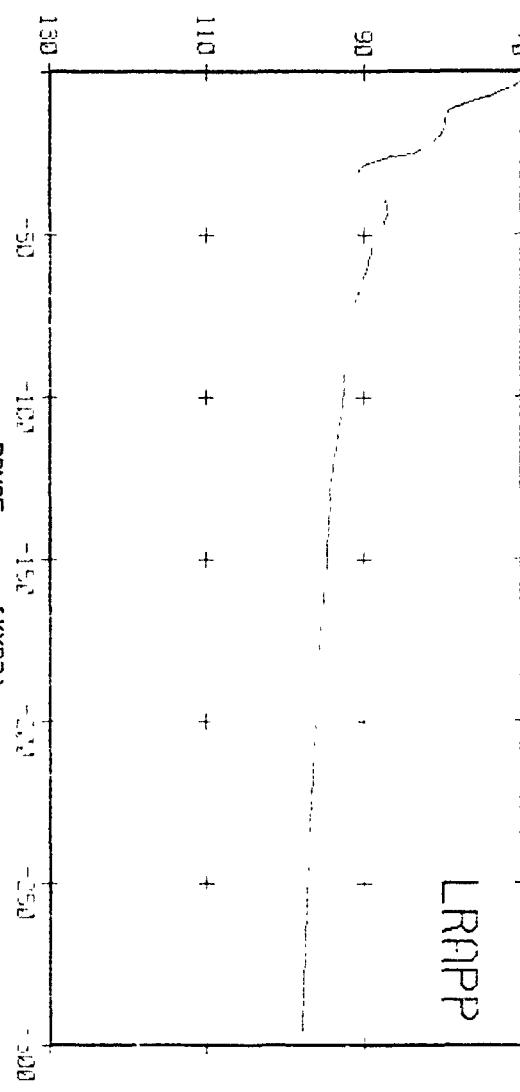
AREA 3B WINTER

S 5E R 9842 F 150

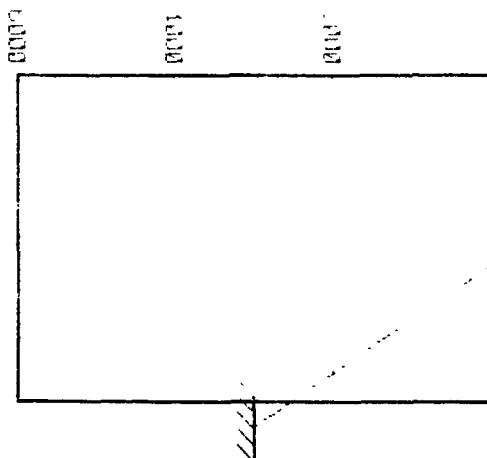
1450 11°C 1500 1550

LRHPP

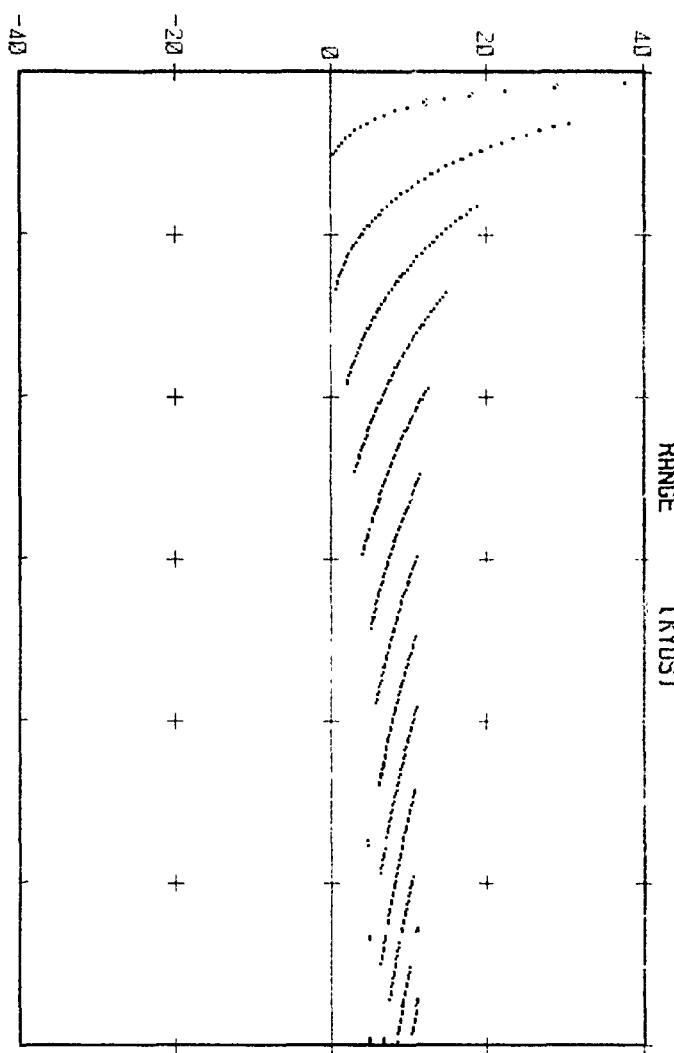
DB LOSS



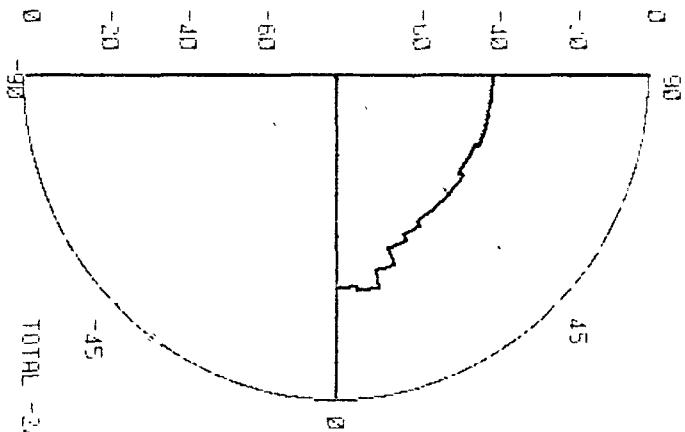
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -24.4 DB

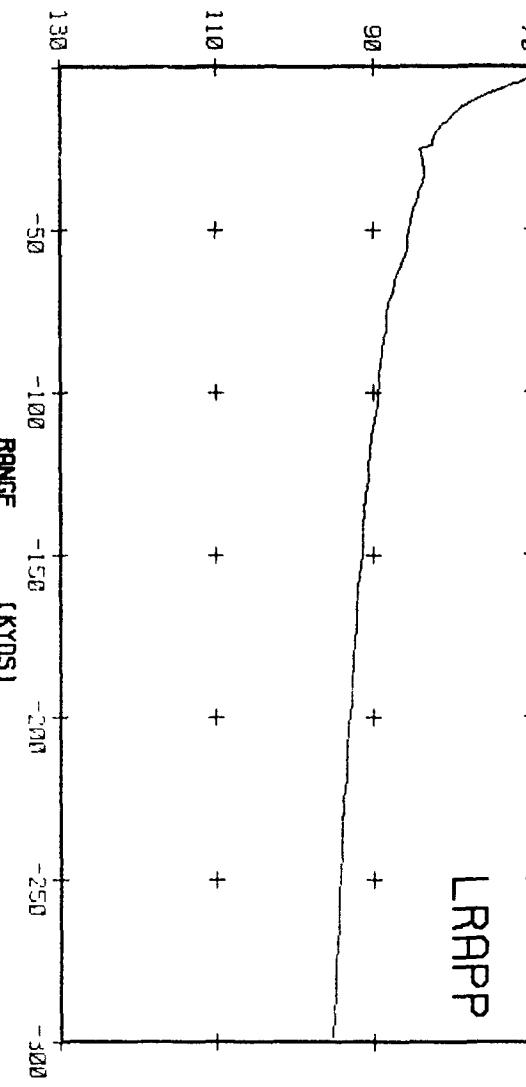
70

AREA 3B WINTER

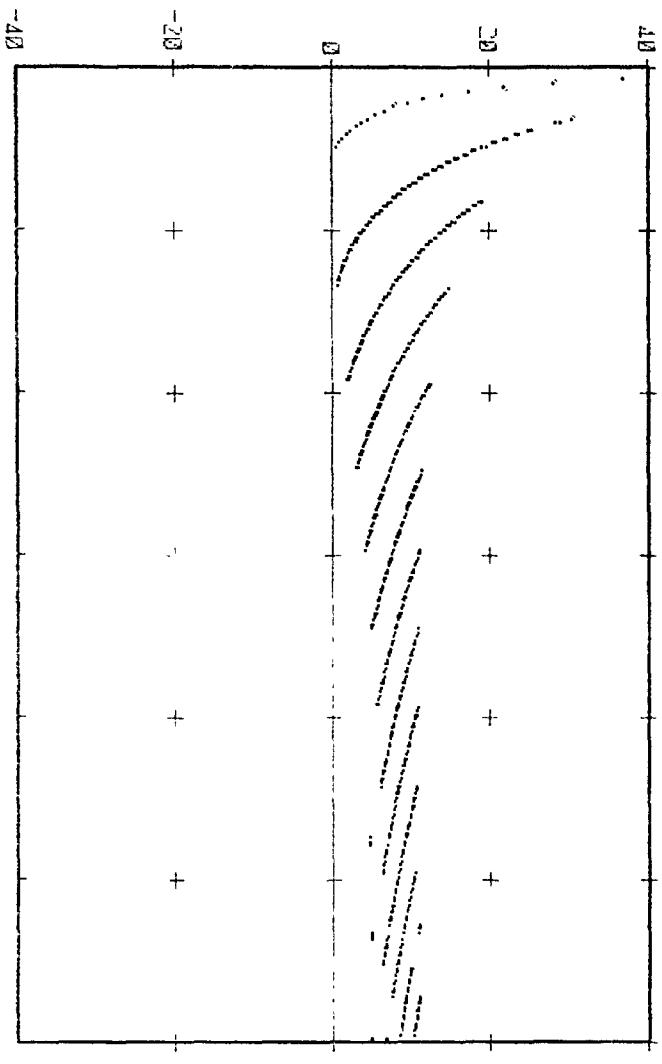
S 380 R 9842 F 15A

1450 M/S 1500 1550

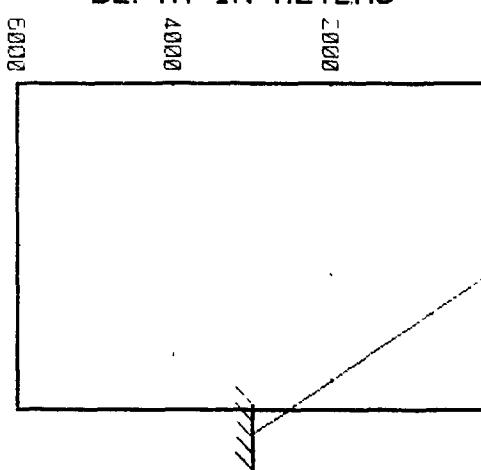
DB LOSS



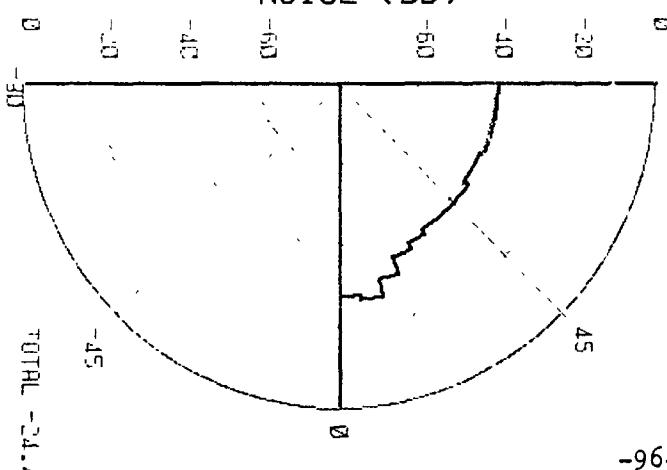
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -24.4 DB

70

AREA 3B WINTER

S 20 R 60 F 300

1450

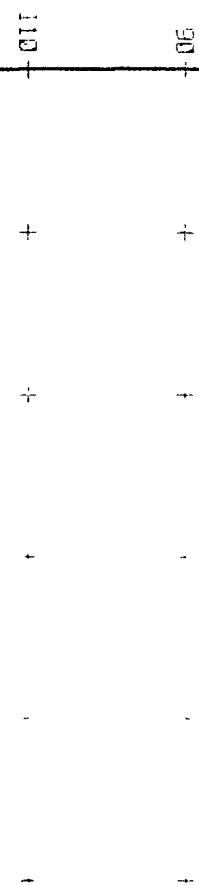
H

1500

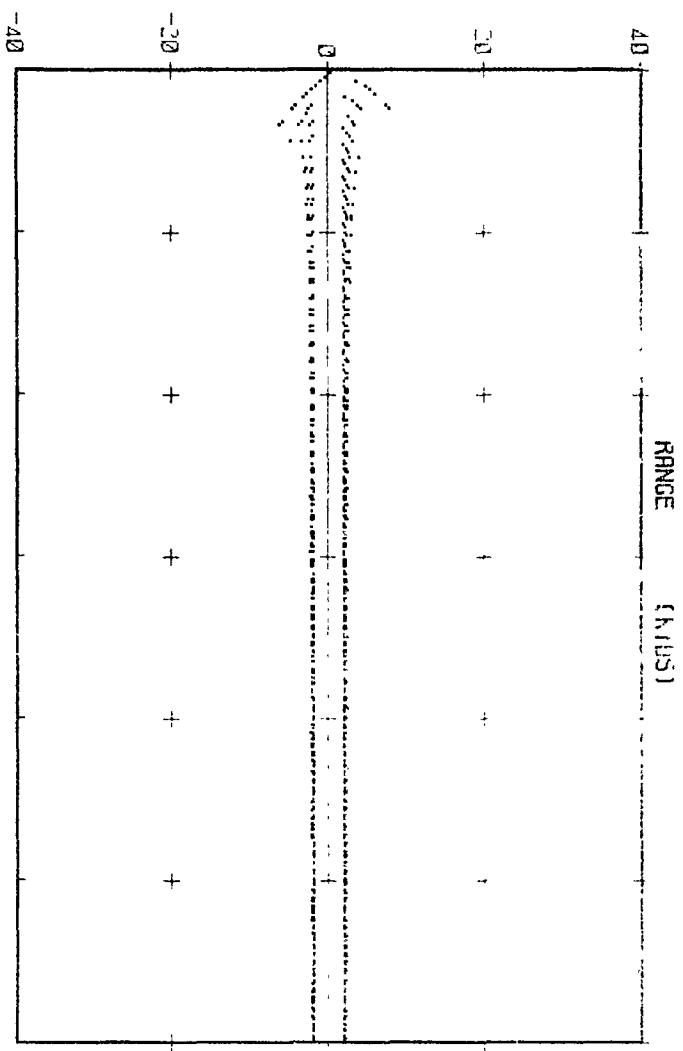
1550

LRAPP

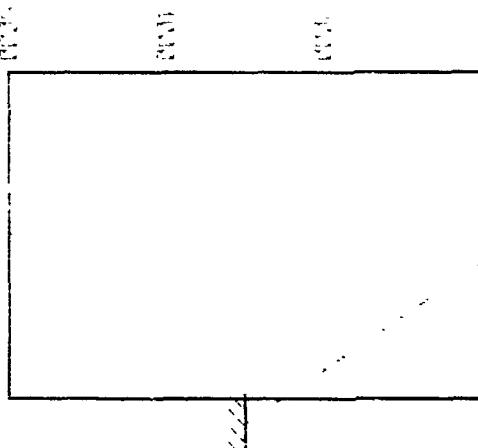
DB LOSS



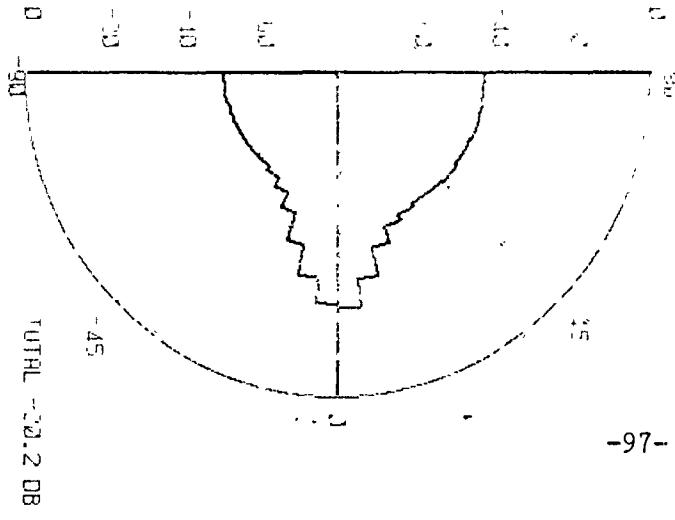
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

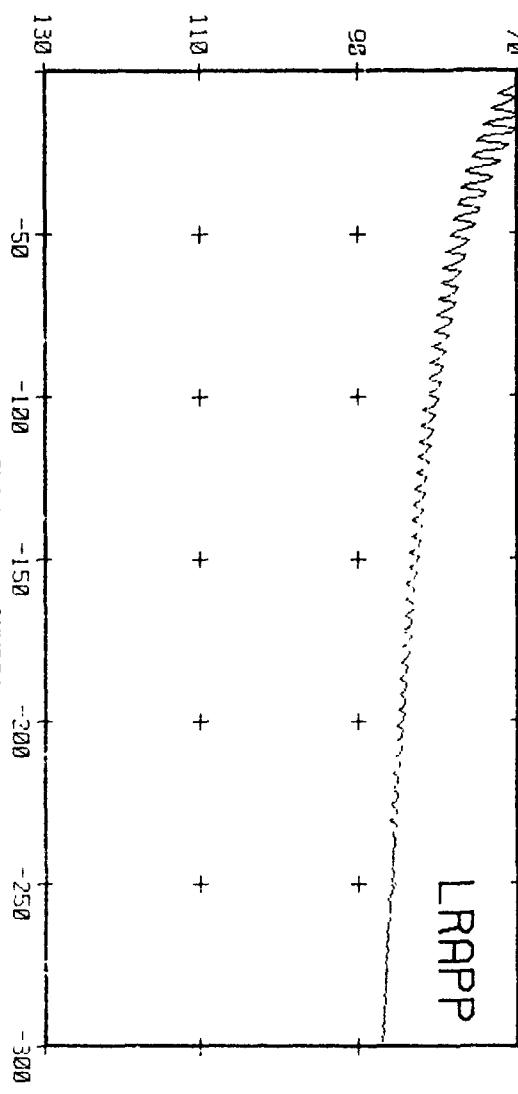


AREA 3B WINTER

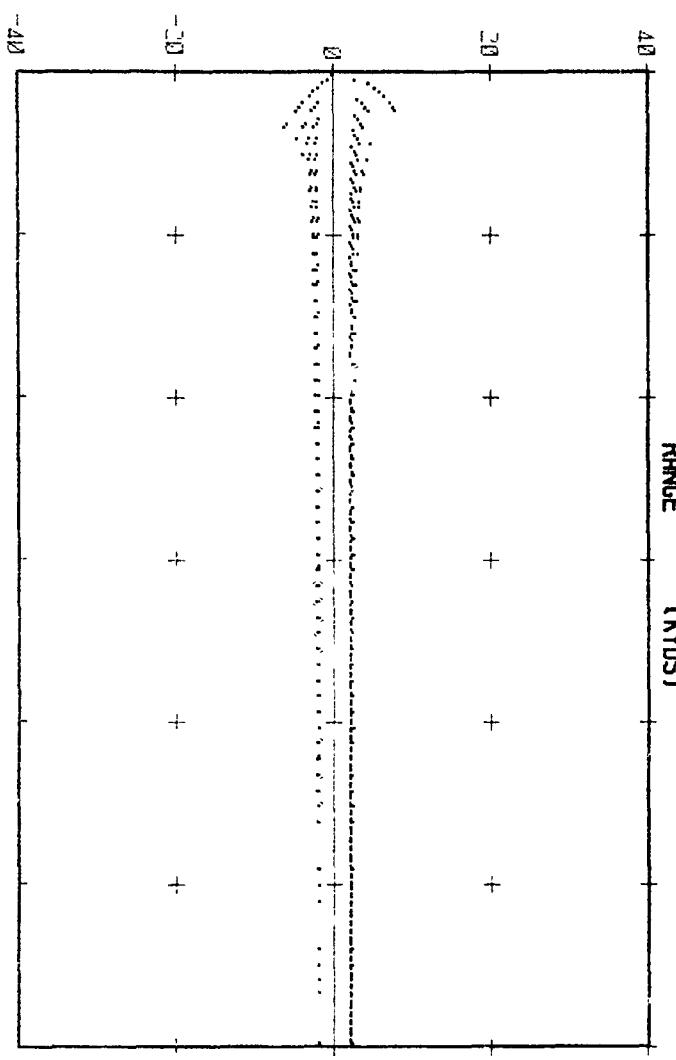
S 50 R 60 F 300

1450 11/3 1500 1550

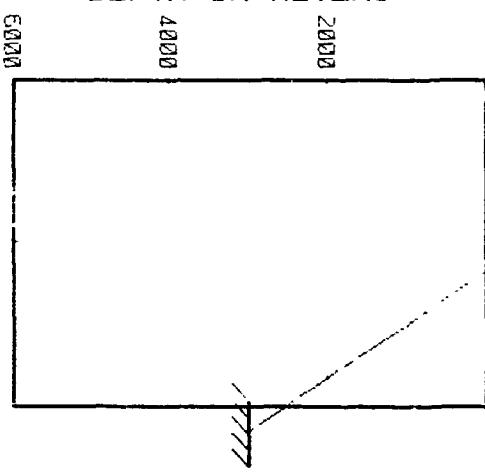
DB LOSS



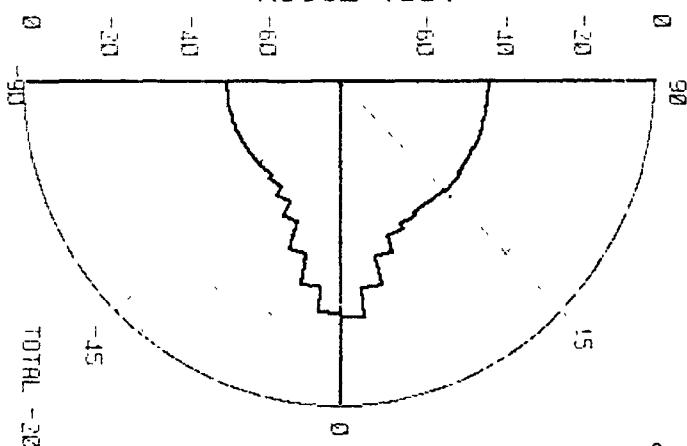
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -20.2 DB

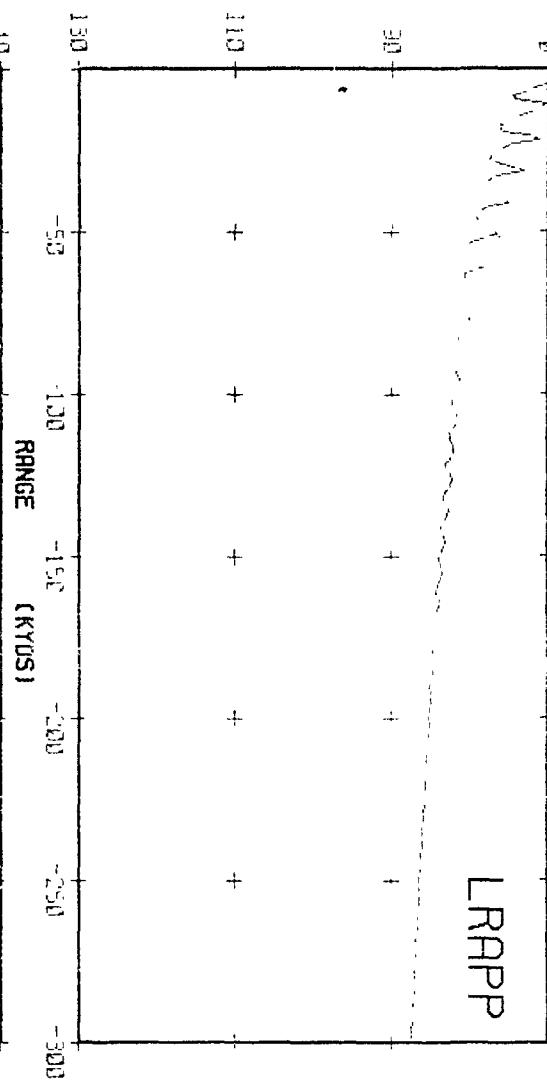
ARR 3B WINTER

S 360 R 60 F 300

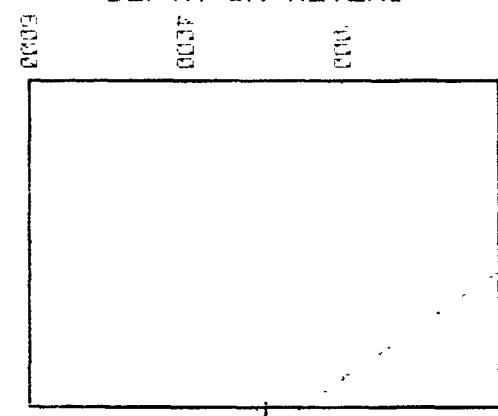
1450 H.5 150M 1550

LRAPP

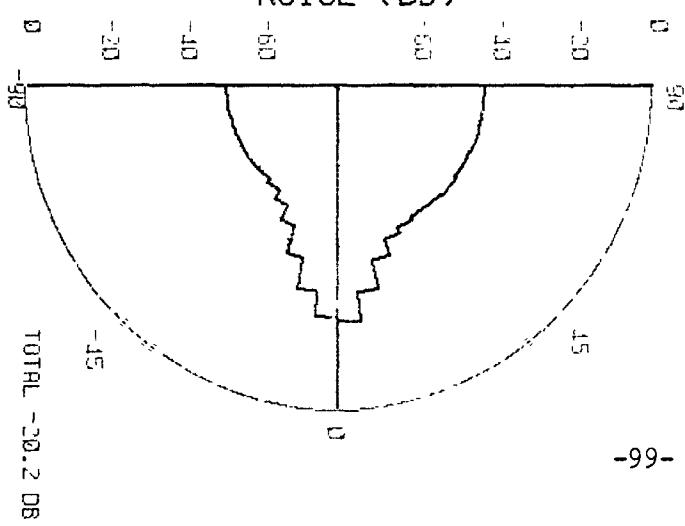
DB LOSS

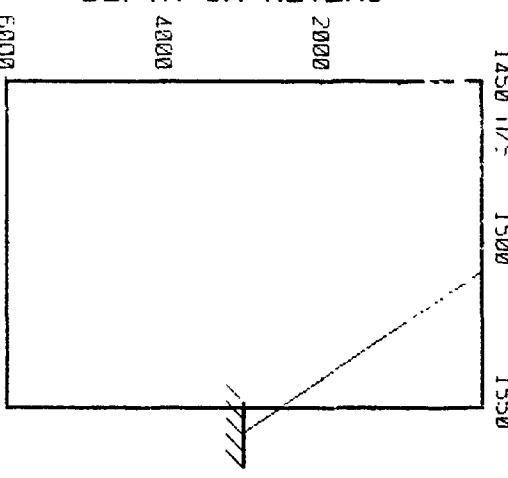
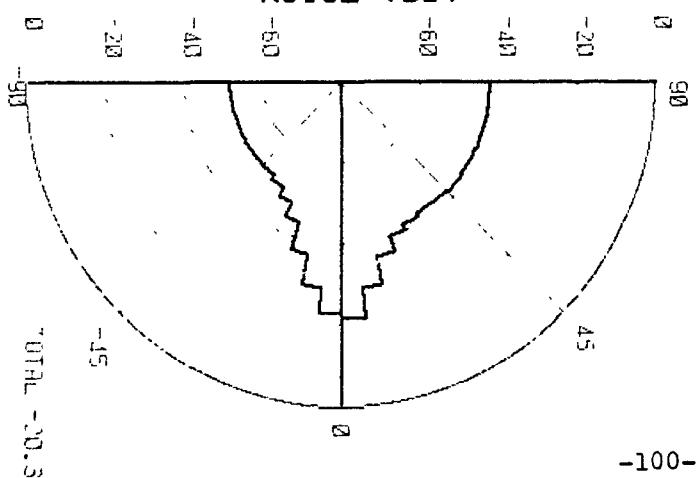
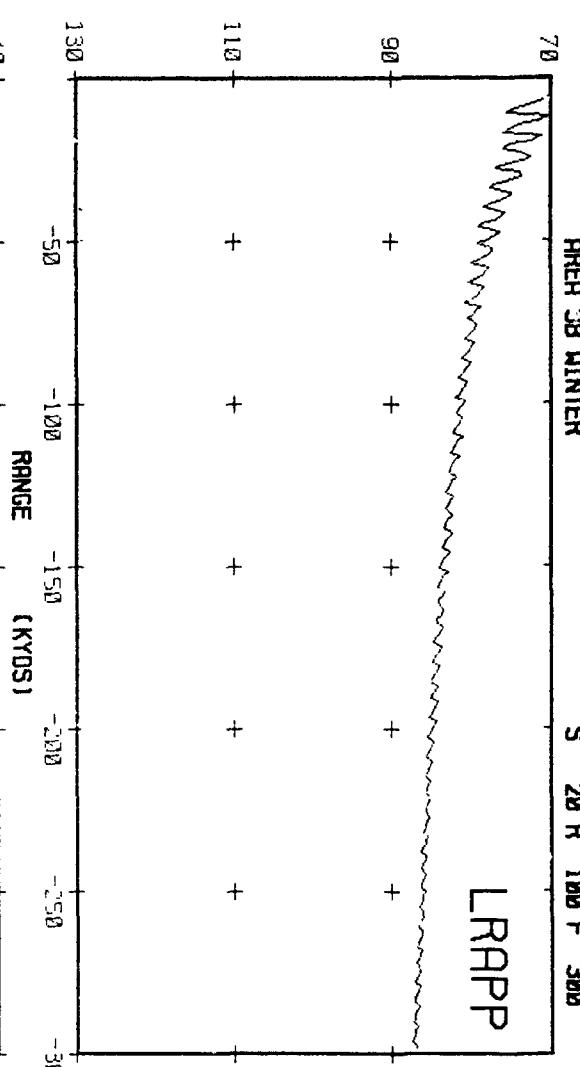
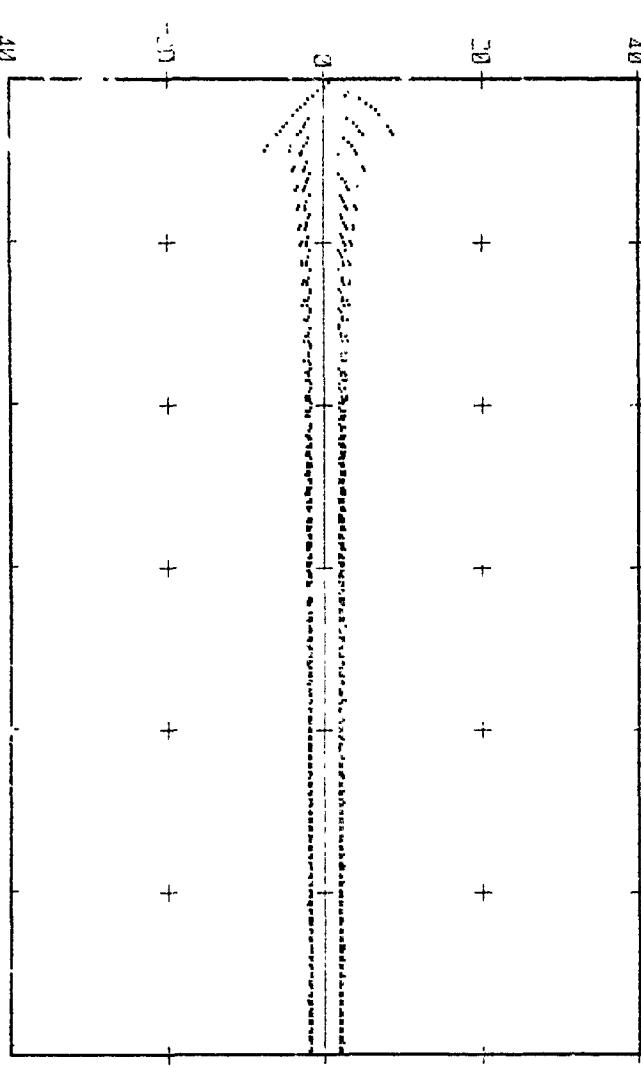


DEPTH IN METERS



NOISE (DB)





70

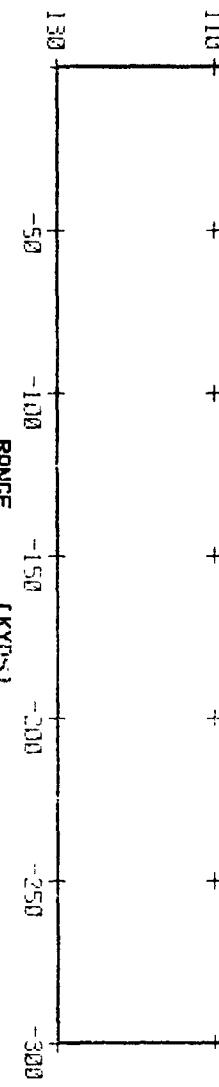
AREA 3B WINTER

S 50 R 100 F 300

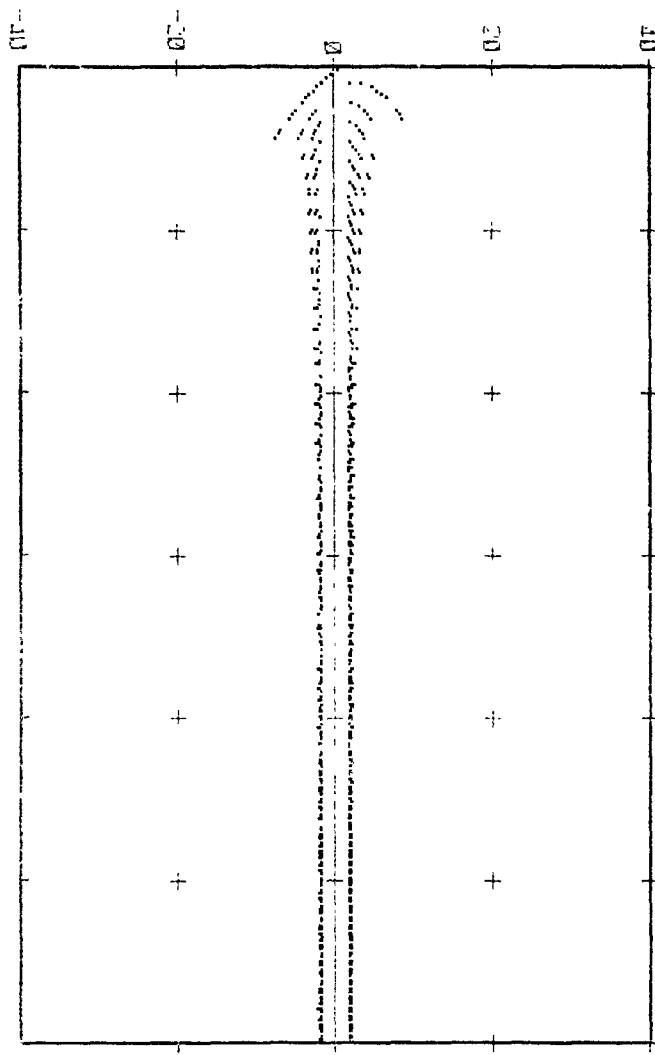
1450 11/5 1500 1550

LRAPP

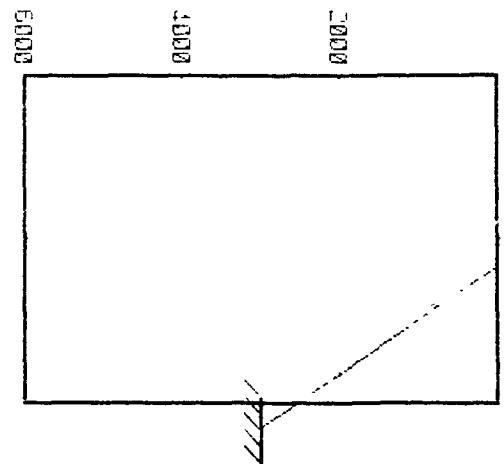
DB LOSS



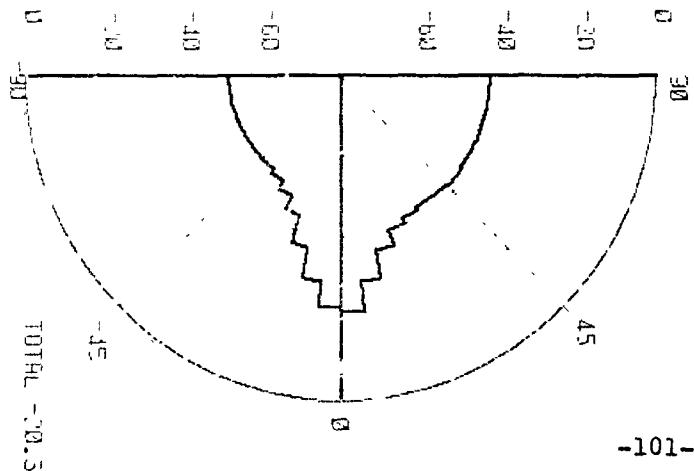
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



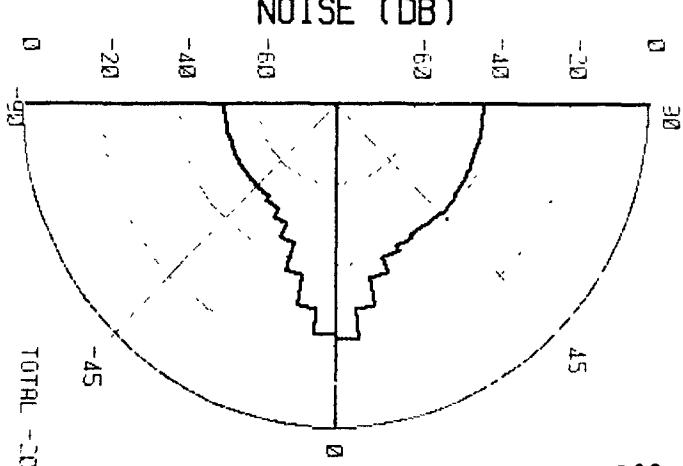
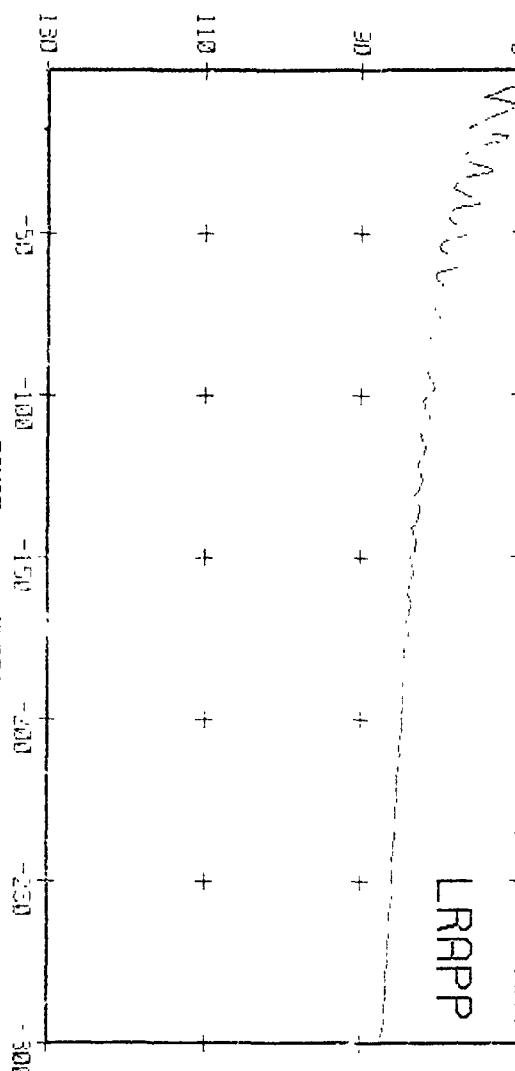
TOTAL - 70.5 DB

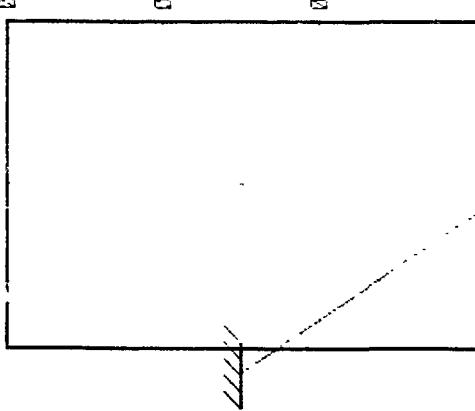
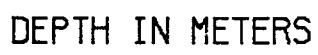
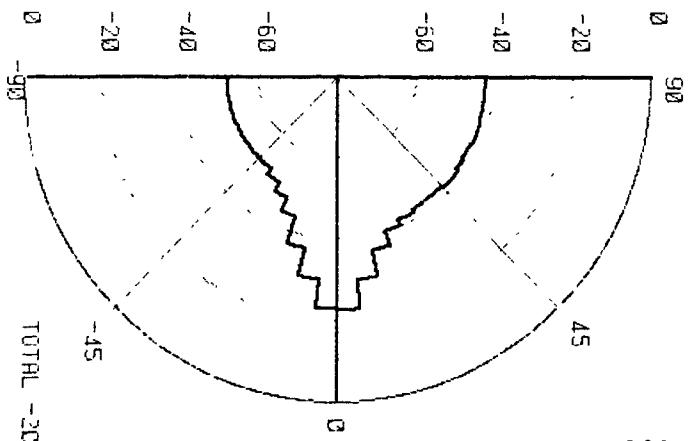
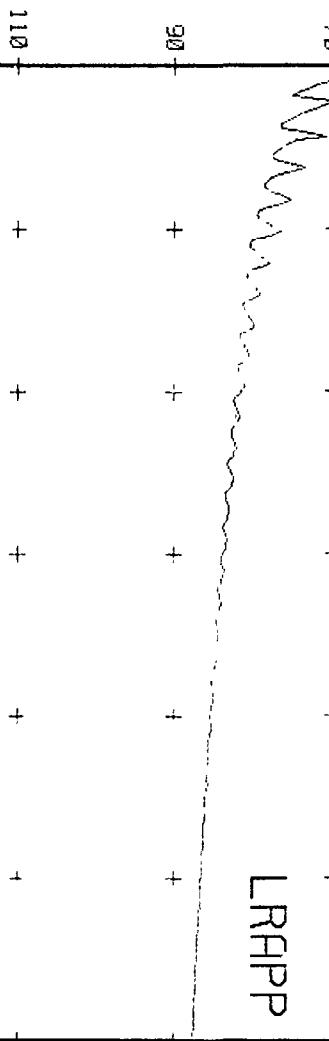
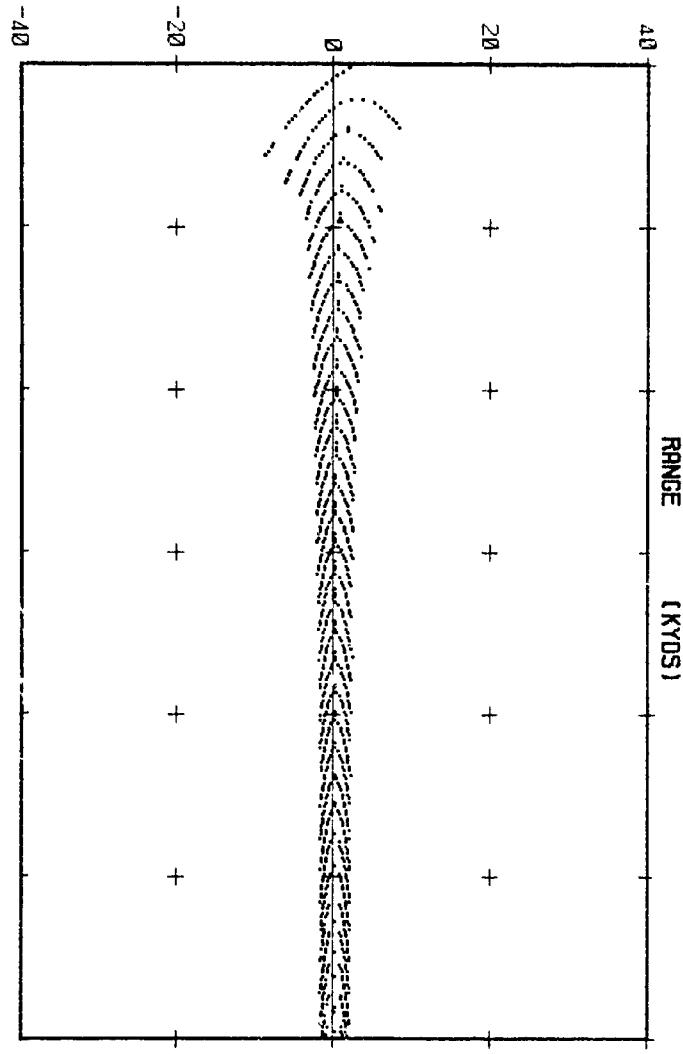
-101-

SREH 3B WINTER

5 380 R 103 F 383

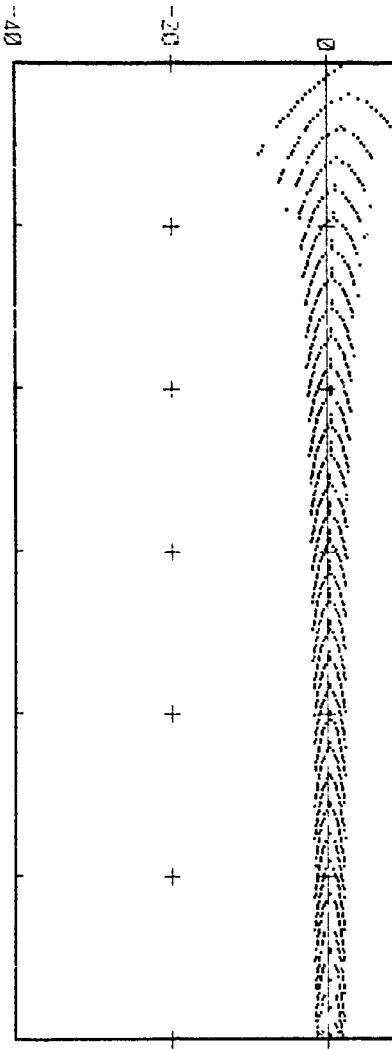
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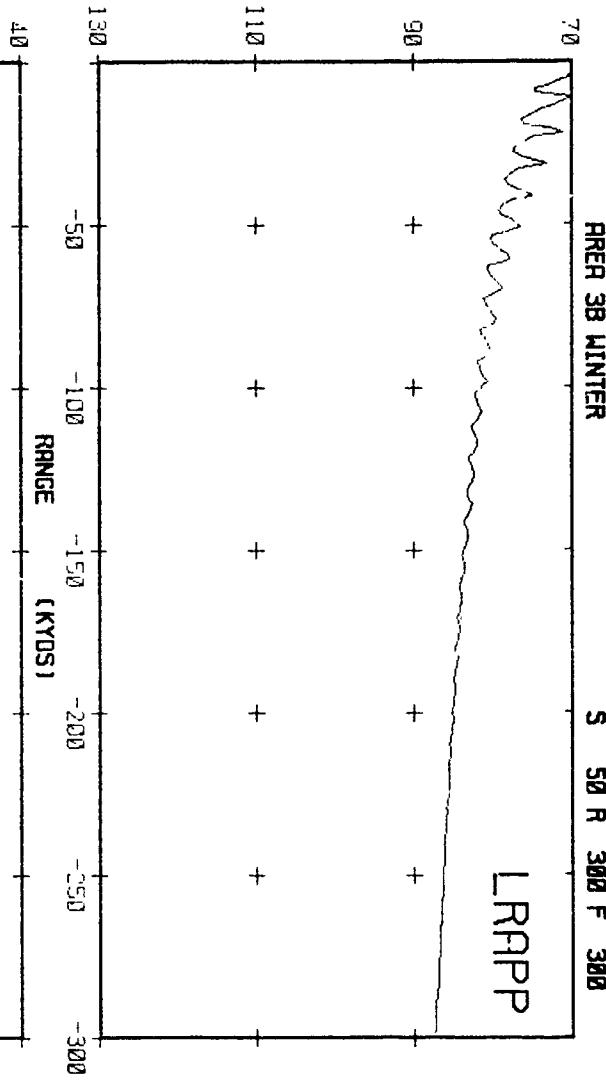


-103-

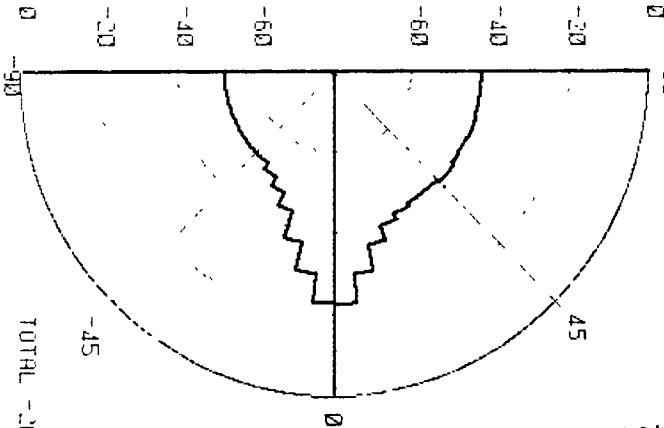
ARRIVAL ANGLE



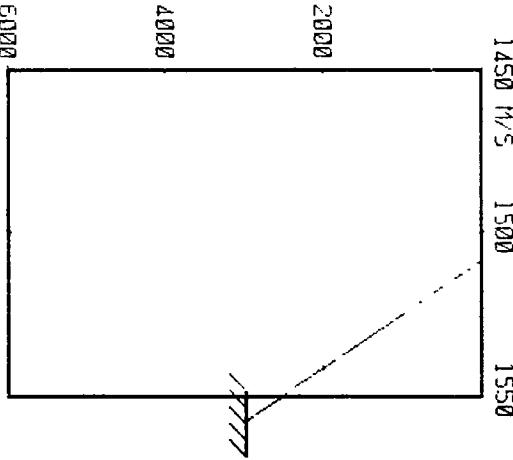
DB LOSS



NOISE (DB)



DEPTH IN METERS



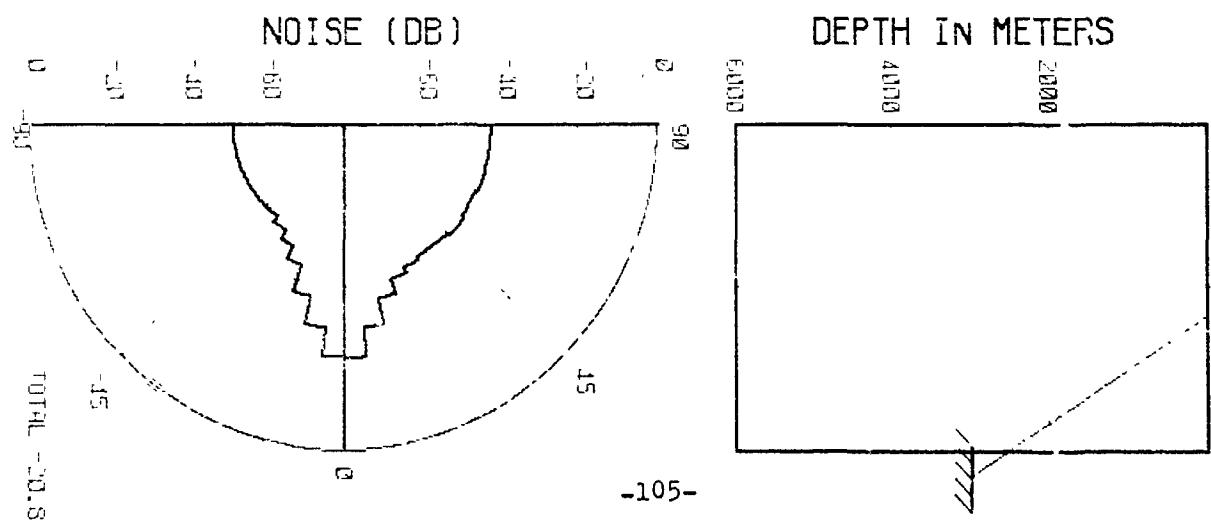
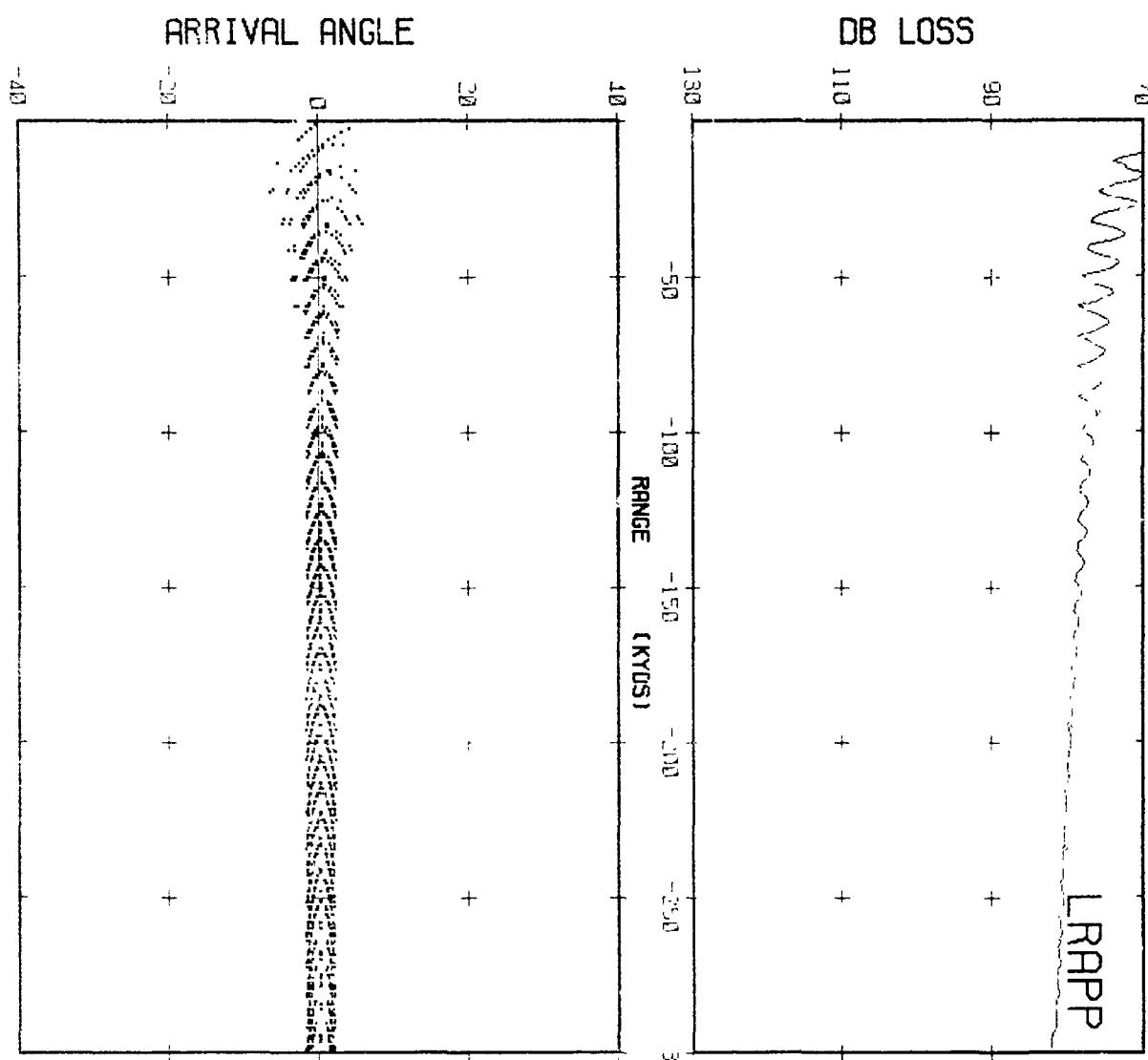
-104-

TOTAL - 20.8 DB

AREA 3B WINTER

5 388 R 388 F 388

1450 1455 1500 1550



AREA 3B WINTER

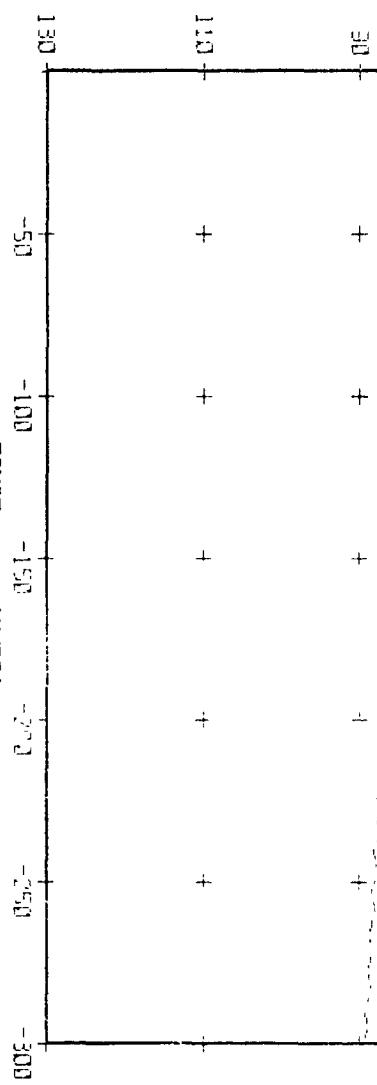
S 20 R 500 F 300

1450 115 150M

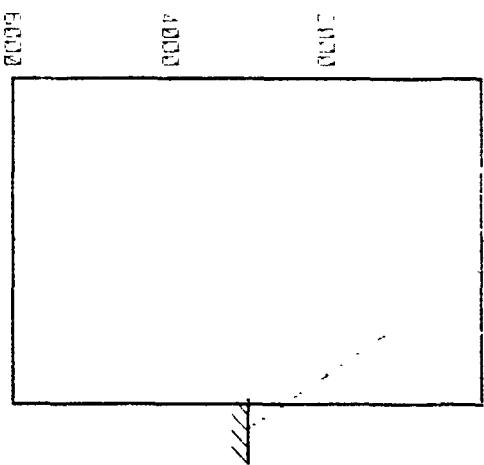
1550

LRAPP

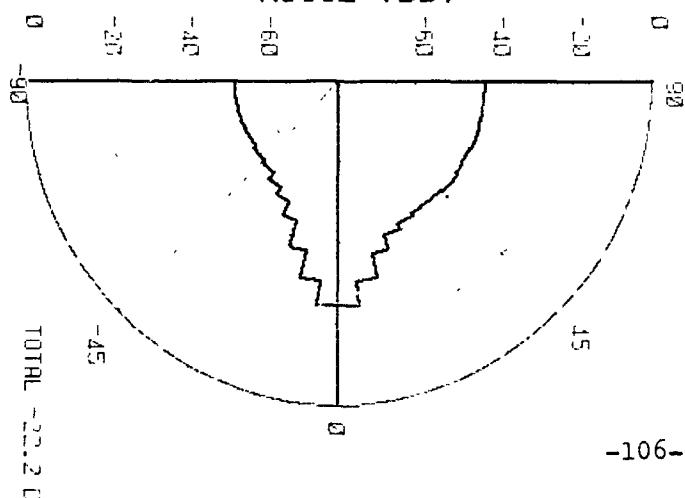
DB LOSS



DEPTH IN METERS



NOISE (DB)



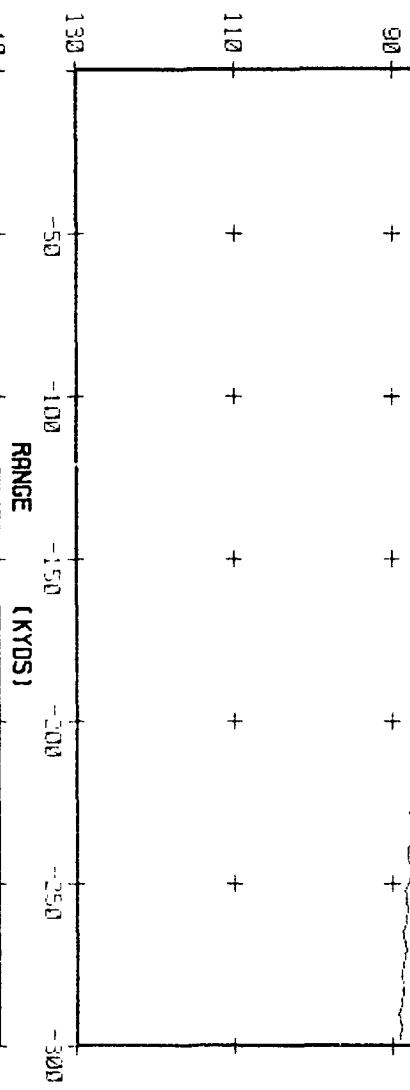
RIVER 3B WINTER

S 50 R 500 F 300

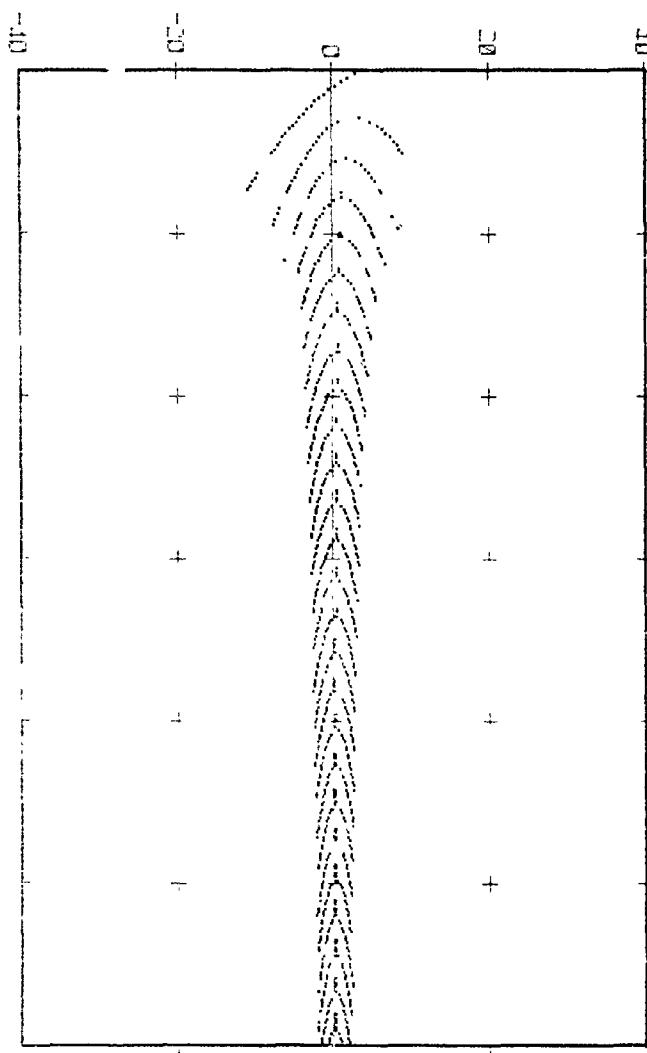
1450 145 1500 1550

LRAPP

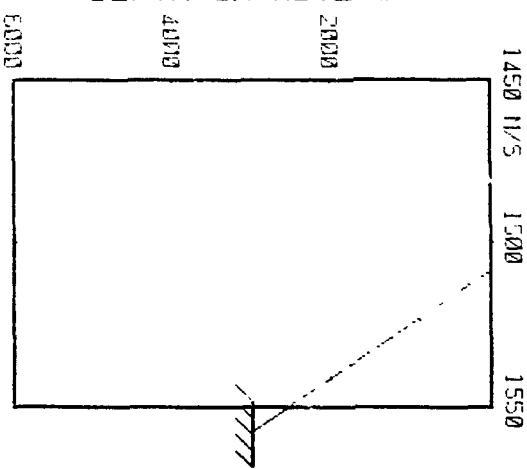
DB LOSS



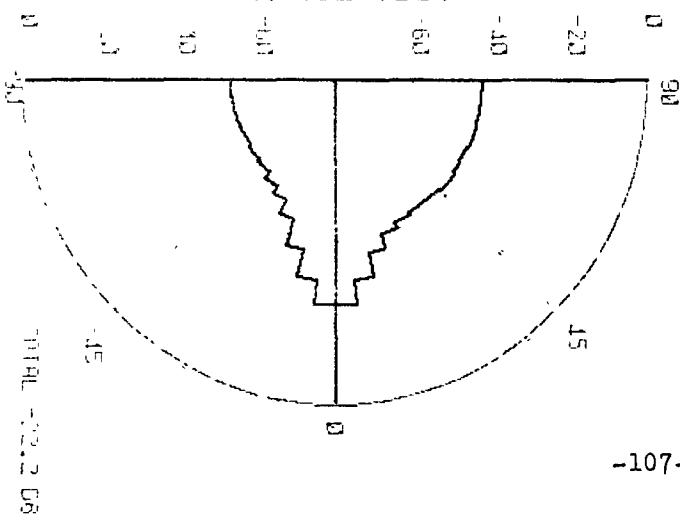
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



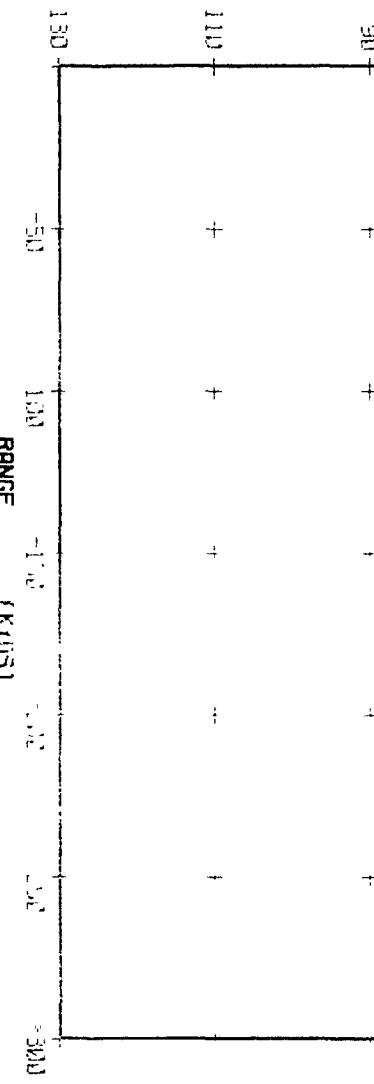
RIVER 3B WINTER

S 300 R 502 F 300

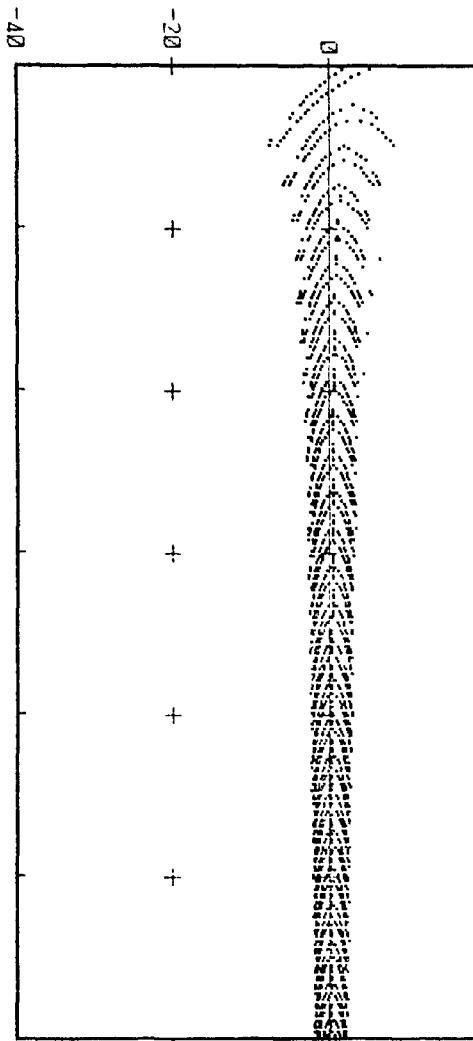
1450 1150 1000 1550

L RAPP

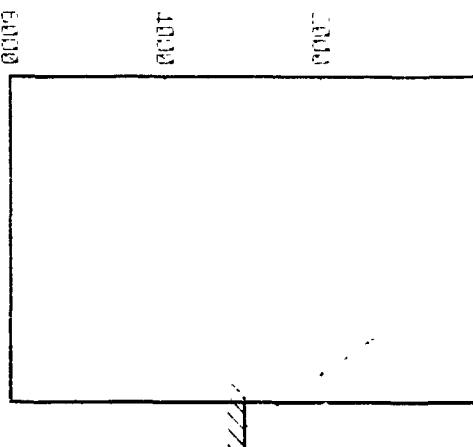
DB LOSS



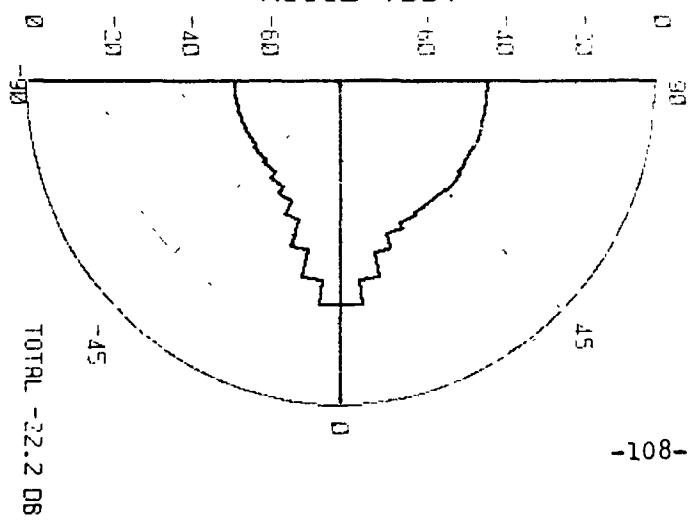
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



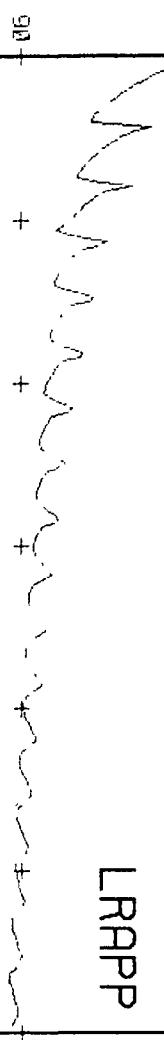
AREA 3B WINTER

S 20 R 1000 F 300

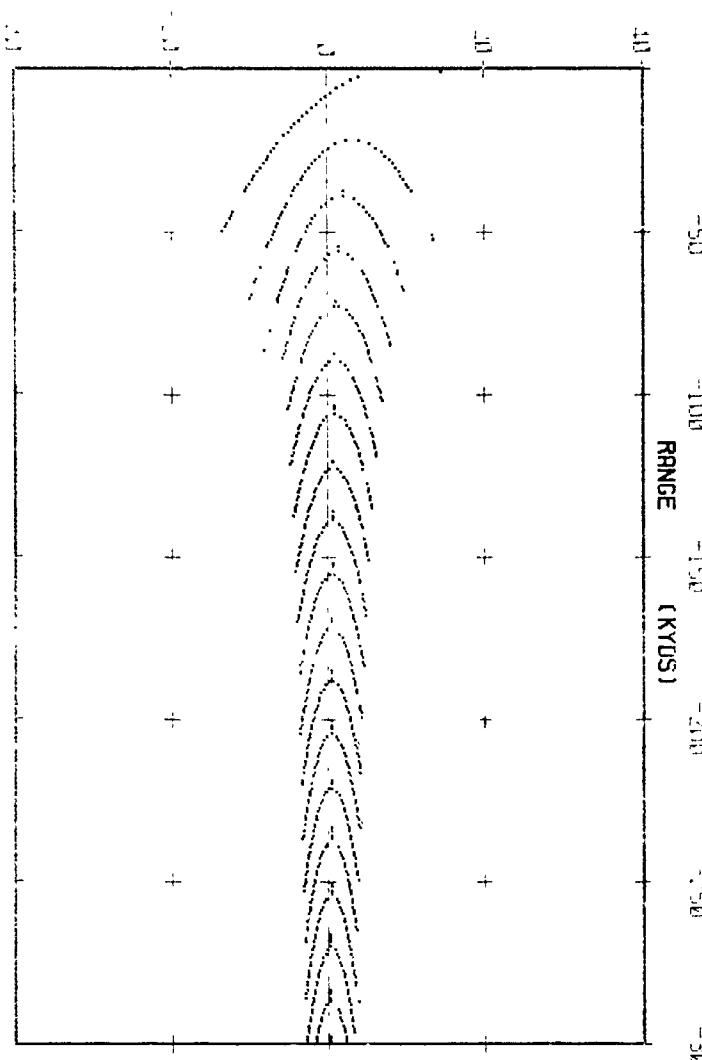
1450 M.S 1500 1550

LRAPP

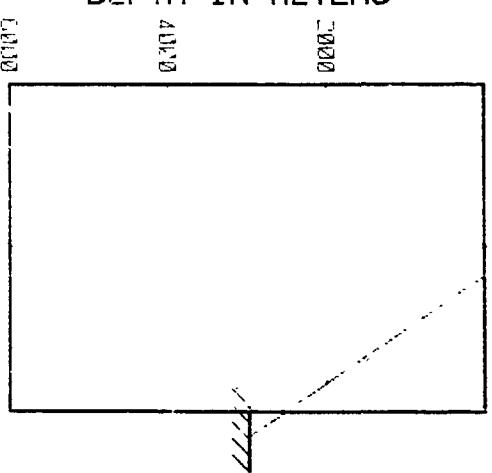
DB LOSS



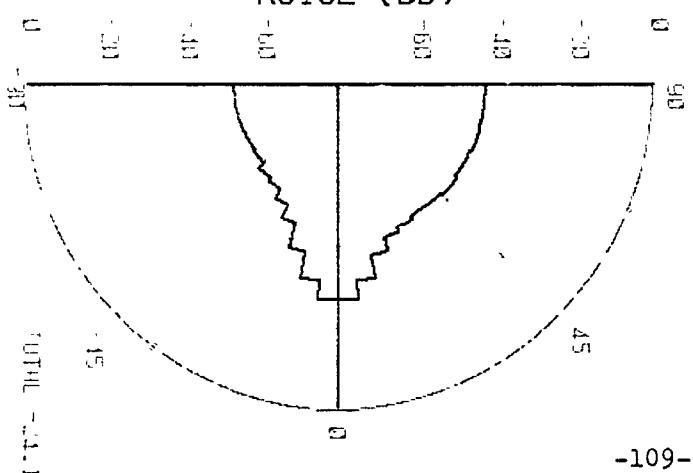
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



UTM L - 24.1 DB

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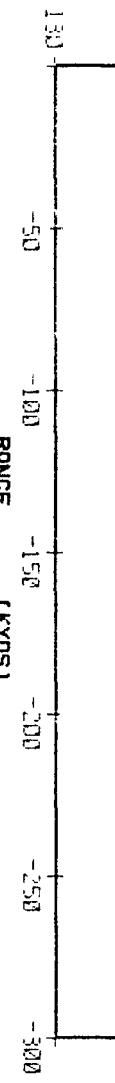
ARR 3B WINTER

S 50 R 1000 F 300

1450 11.5 1500 1550

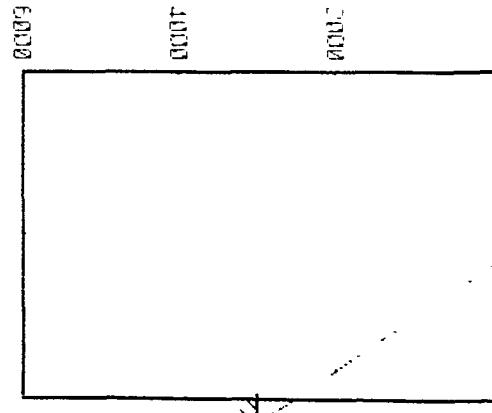
LRAAPP

DB LOSS

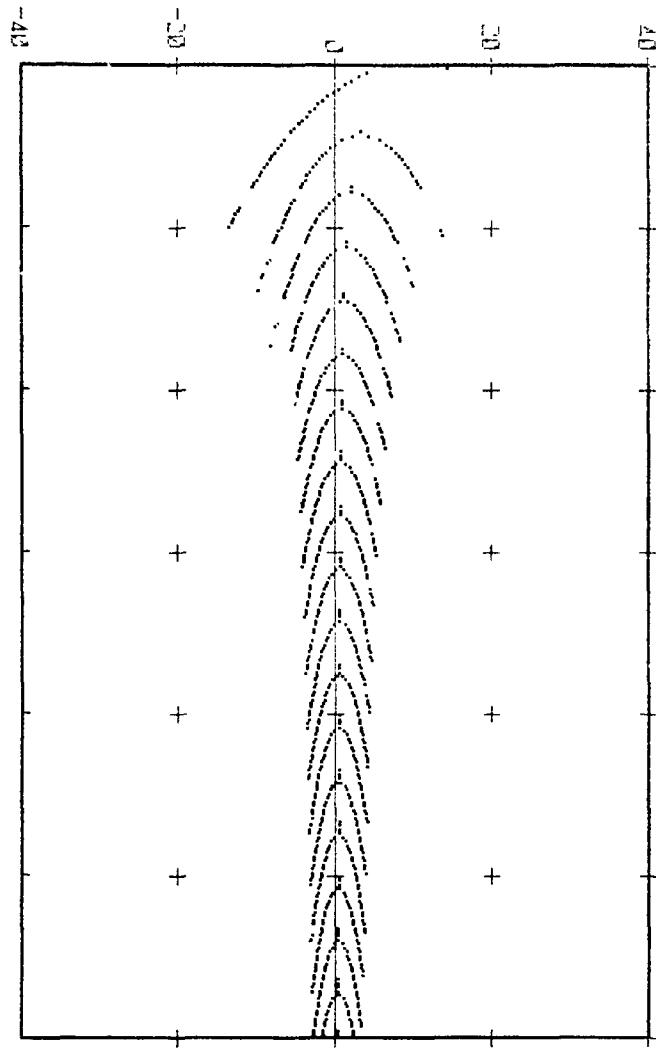


RANGE (KYDS)

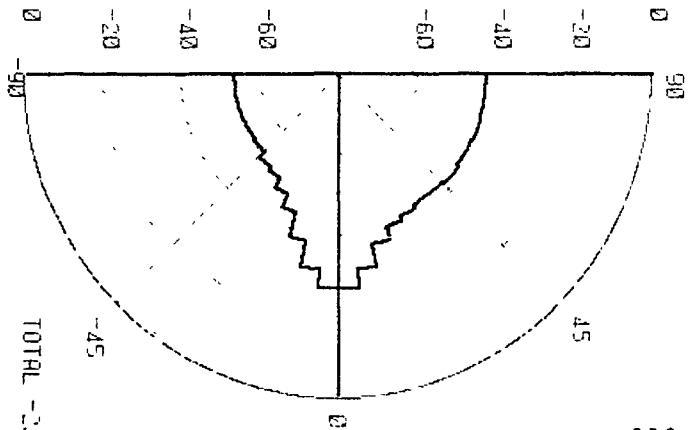
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -24.1 dB

70

AREA 3B WINTER

S 360 R 1000 F 300

1450 1450 1530 1550

LRAPP

DB LOSS

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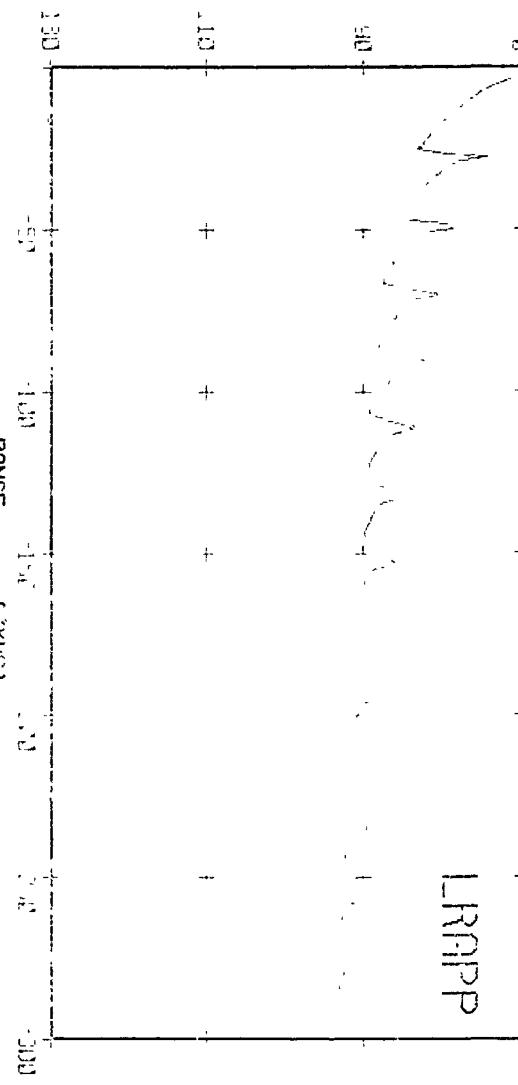
+

AFTER 38 WINTER

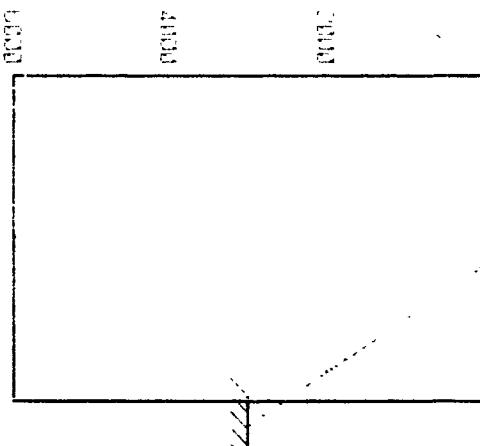
S 20° R 150° F 30°

1450 M.S. 1500 1550

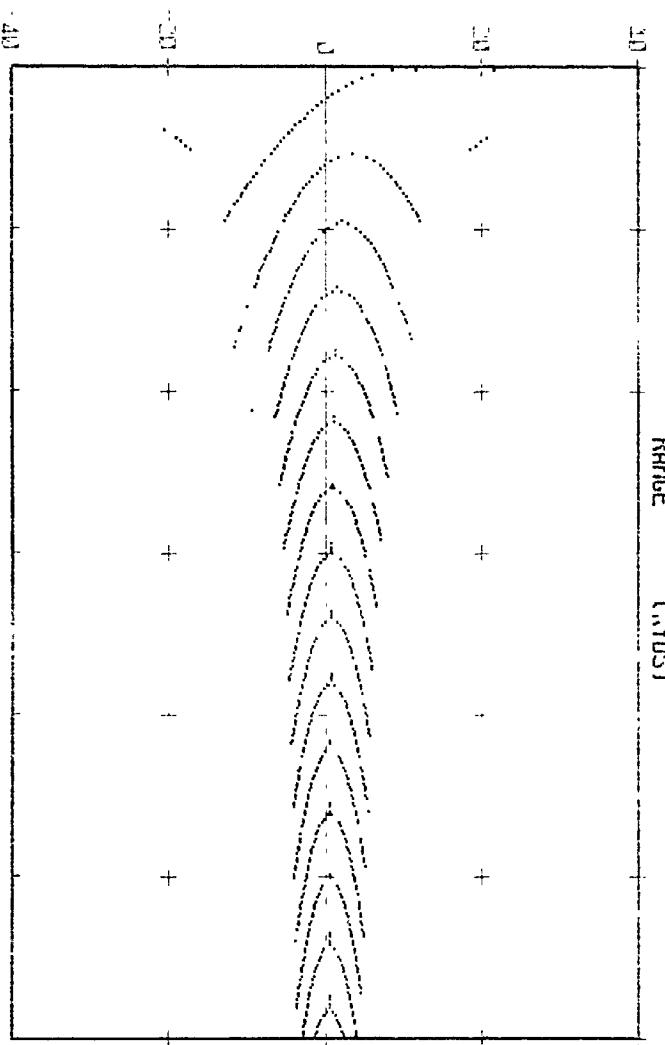
DB LOSS



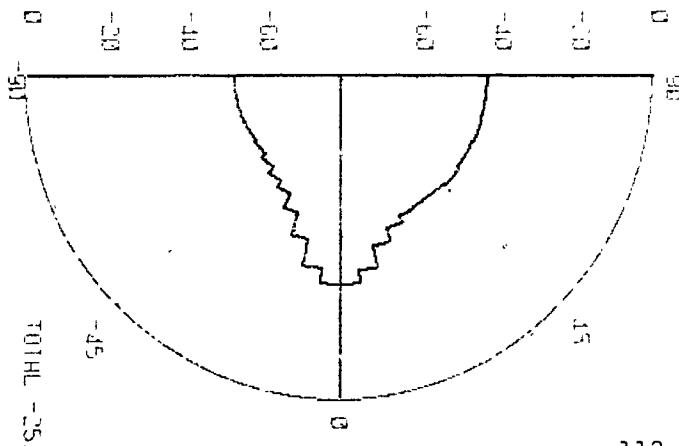
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -25.1 DB

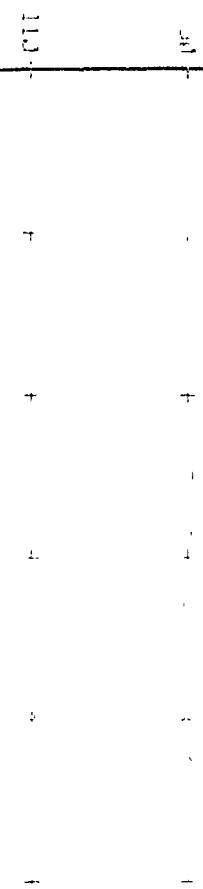
Final 33 Winter

S 50° R 150° F 300

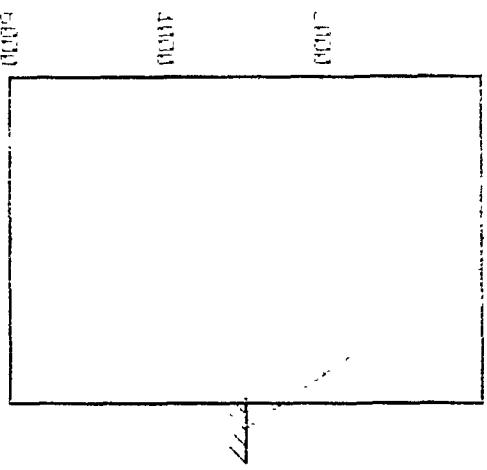
1350 11.5 1400 1550

LRAFP

DB LOSS

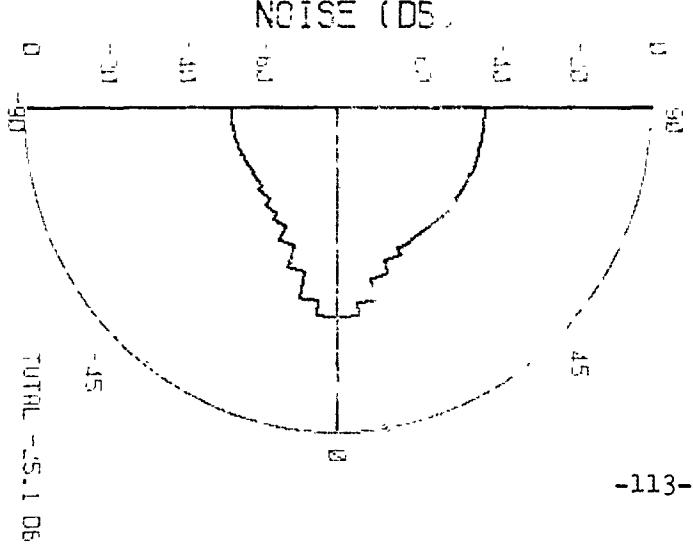
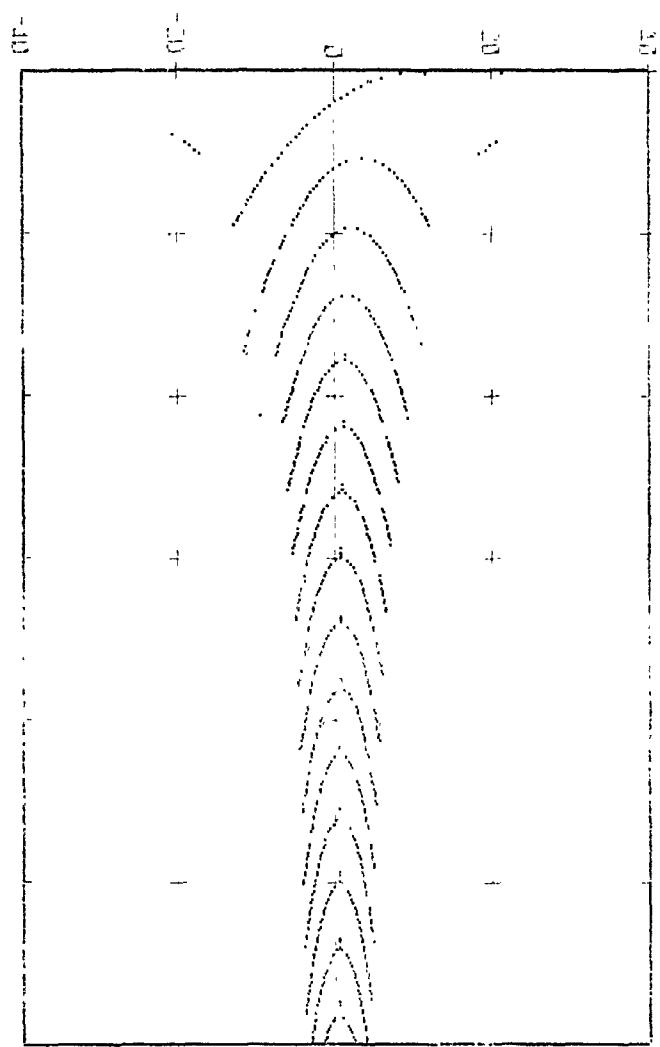


DEPTH IN METERS



NOISE (DS)

ARRIVAL ANGLE



-113-

ARR 3B WINTER

S 300 R 1500 F 300

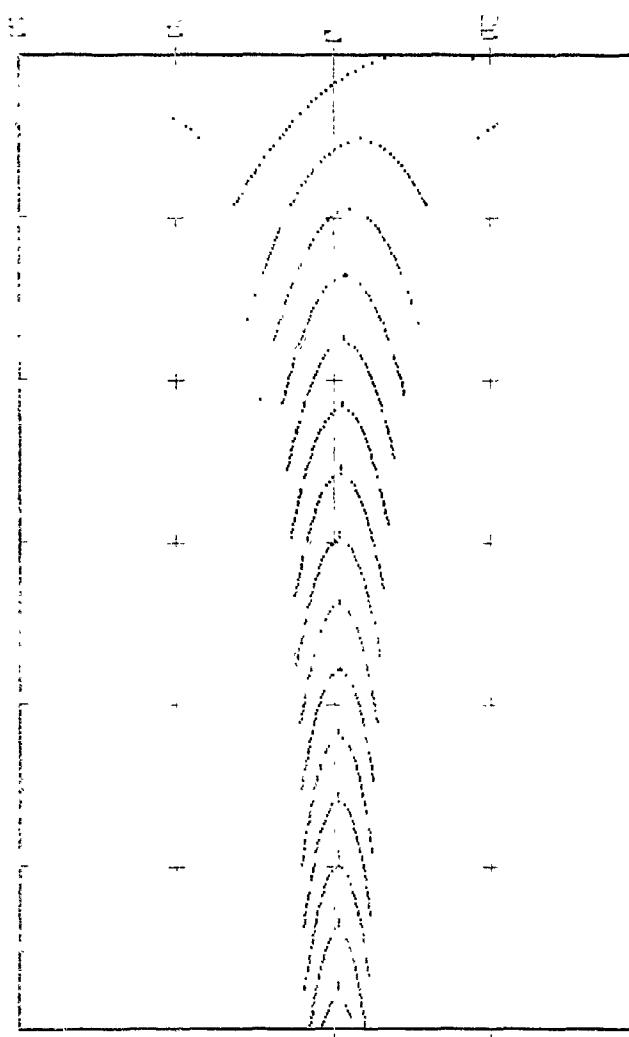
1450 145 1500 1550

LRAPP

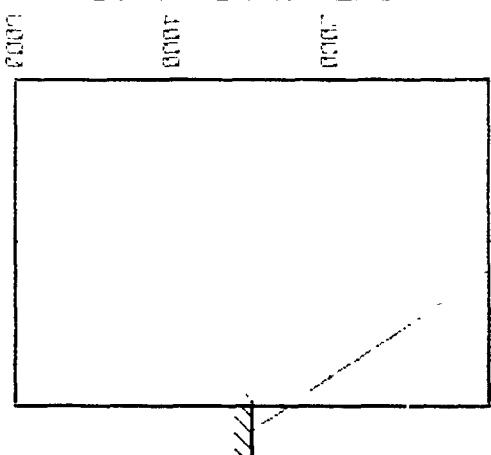
DB LOSS



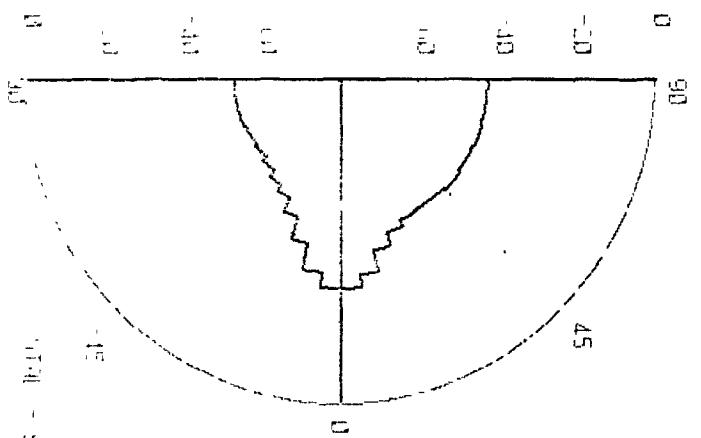
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

ARRER 3B WINTER

S 20 R 6000 F 300

1450 M/S 1500 1550

LRAPP

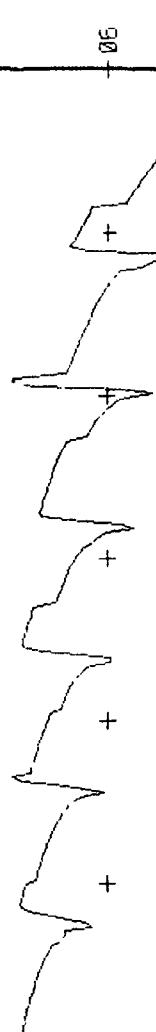
DB LOSS

130
110
90
70
50
30
10

RANGE

(KIOS)

+

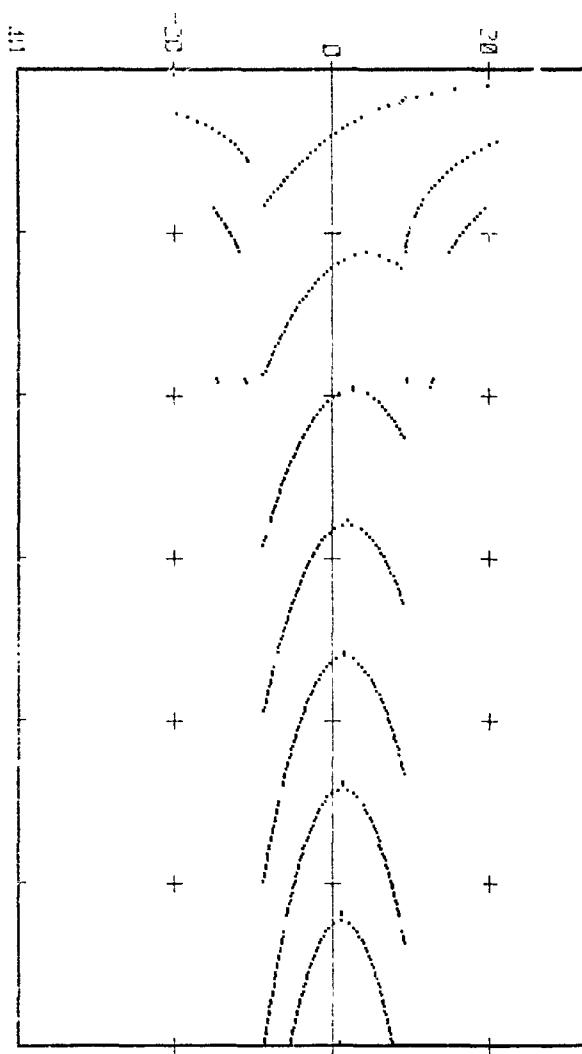


DEPTH IN METERS

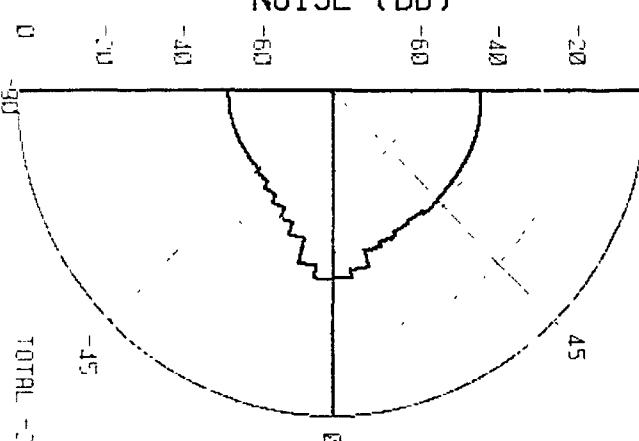
6000
4000
2000
0

-115-

ARRIVAL ANGLE

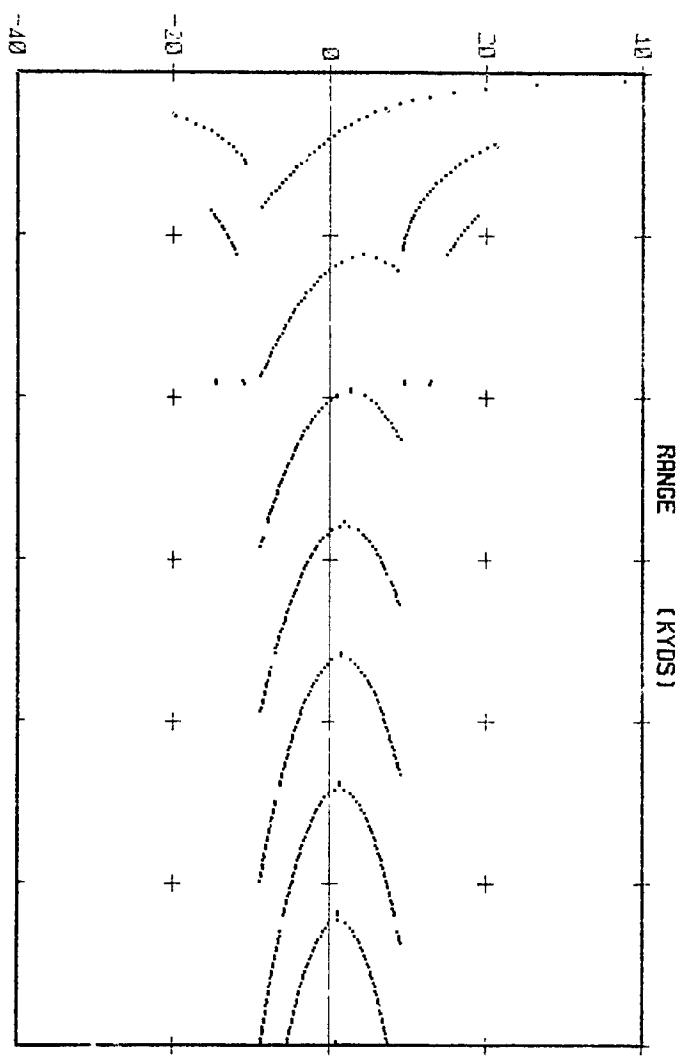


NOISE (DB)

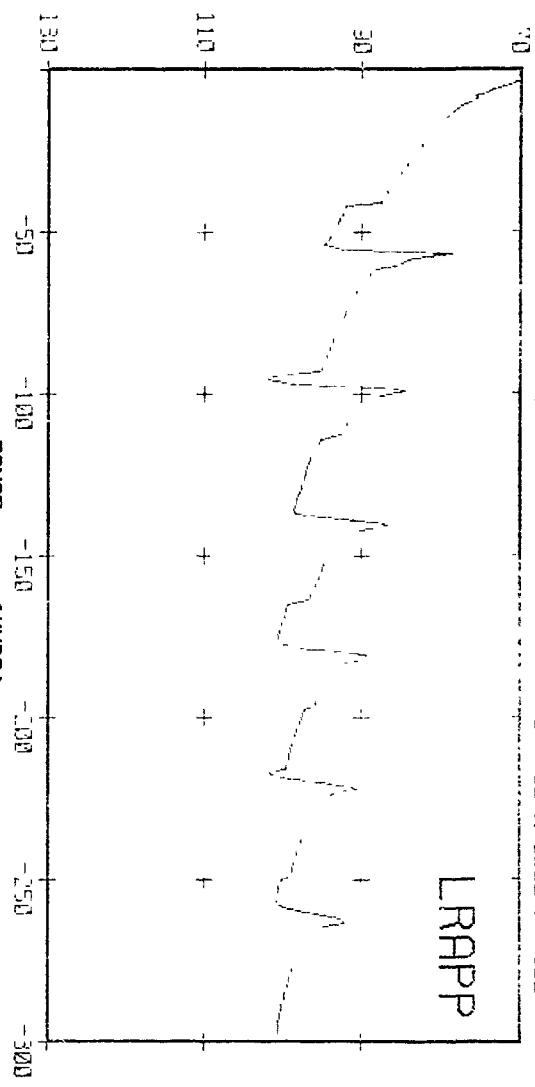


TOTAL -29.0 DB

ARRIVAL ANGLE



DB LOSS

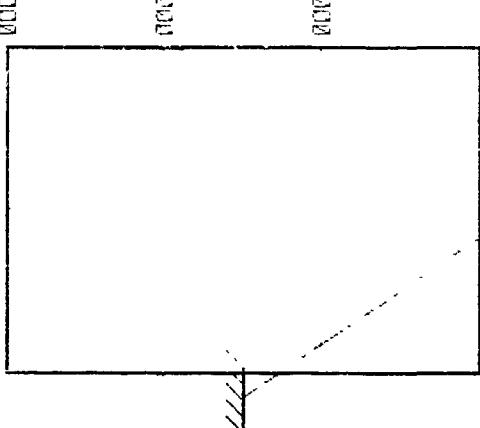


L RAPP

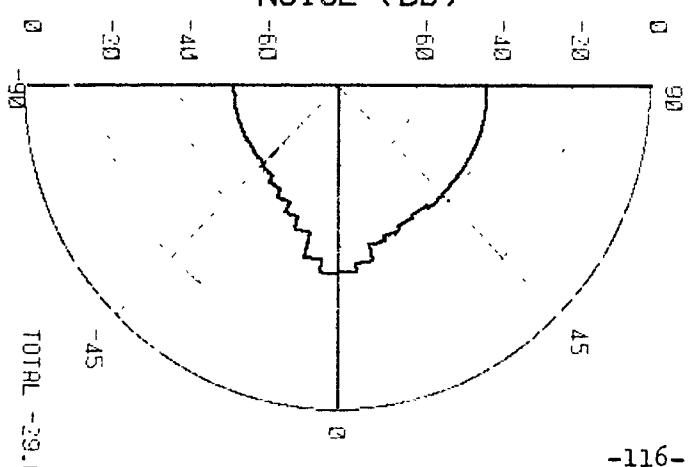
S 50 R 6200 F 3000

1450 1475 1500 1525

DEPTH IN METERS



NOISE (DB)



TOTAL -29.0 dB

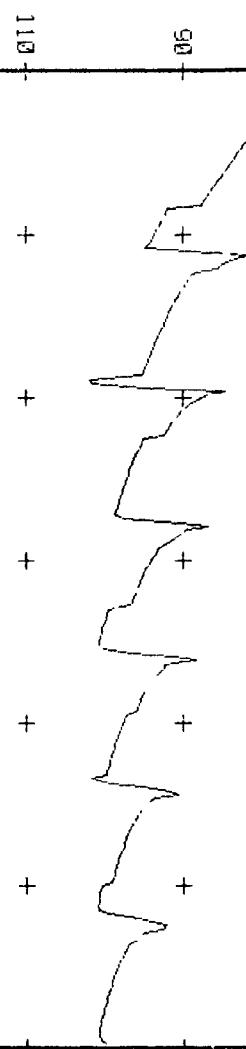
-8

AREA 3B WINTER

S 300 R 6000 F 300

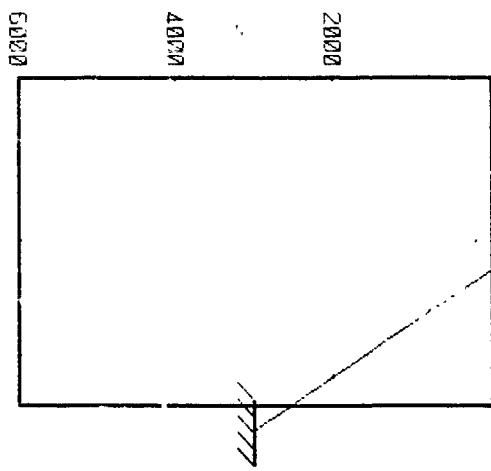
1450 M/S 1500 1550

DB LOSS

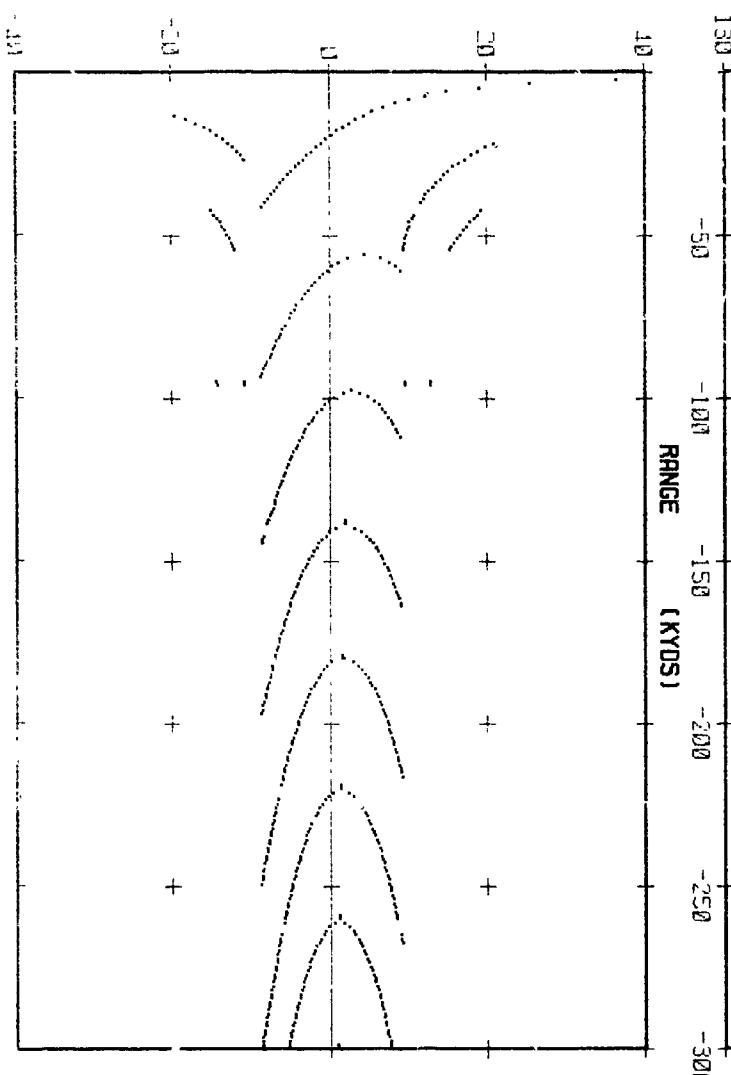


L RAPP

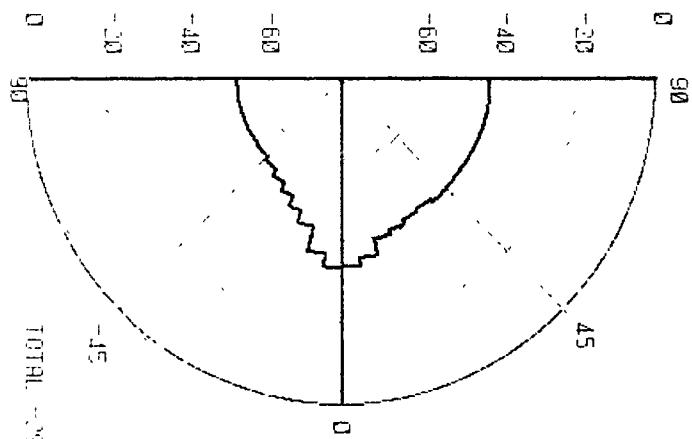
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

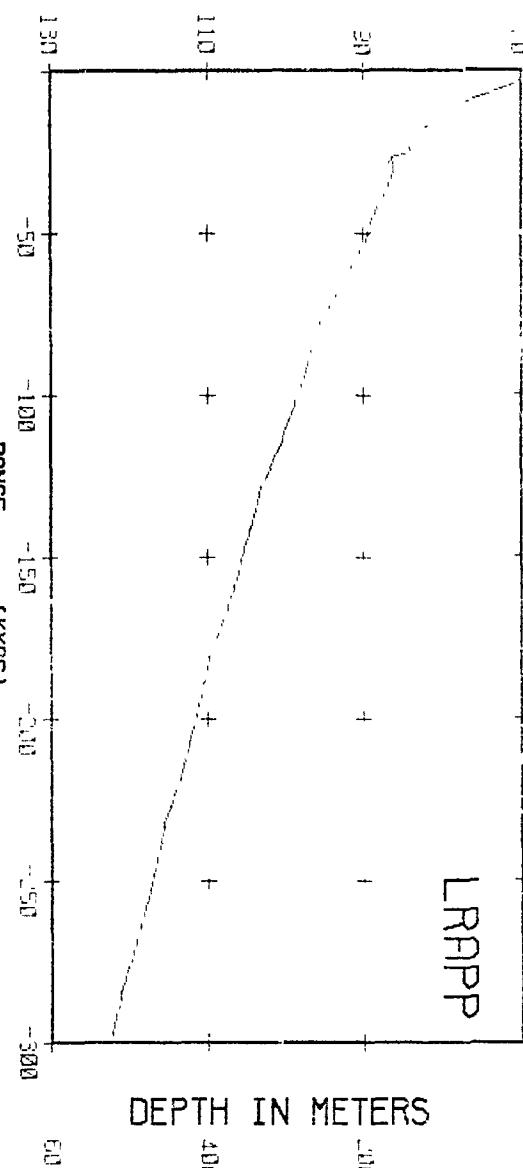


AREA 38 WINTER S 20 R 9842 F 382

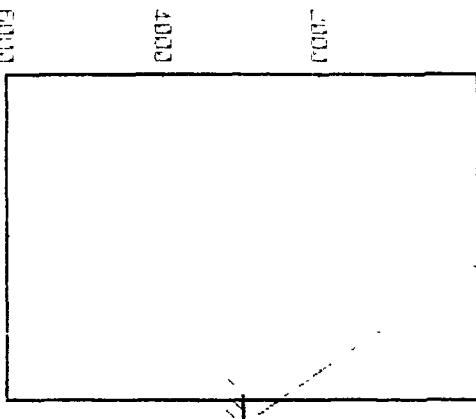
1450 11.5 1500 1550

LRAPP

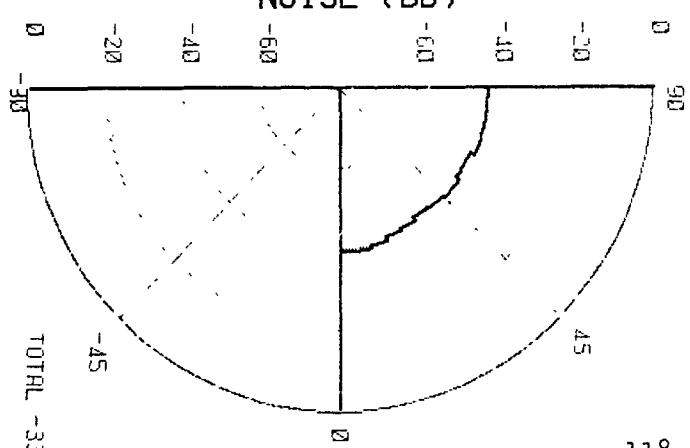
DB LOSS



DEPTH IN METERS



NOISE (DB)



70

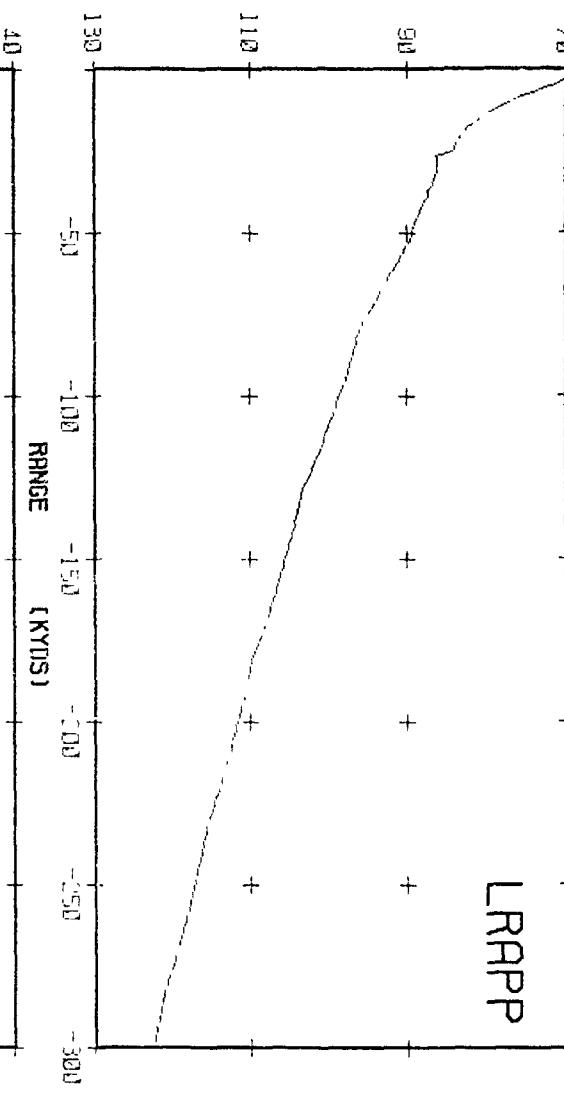
AREA 3B WINTER

S 50 R 9842 F 302

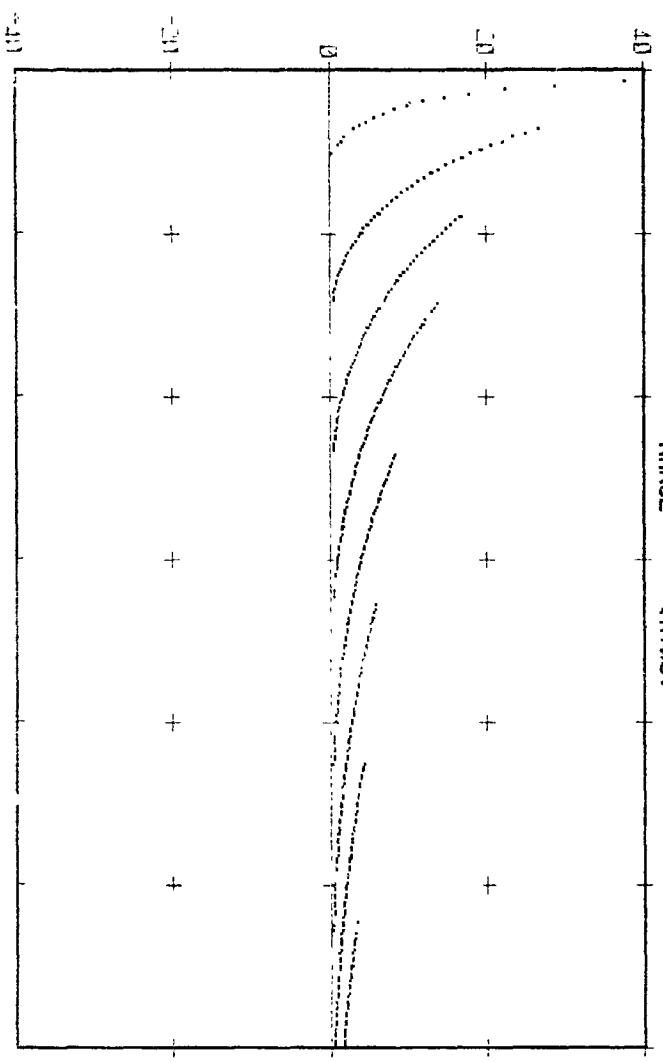
1450 M, 5 1500 1550

LRAPP

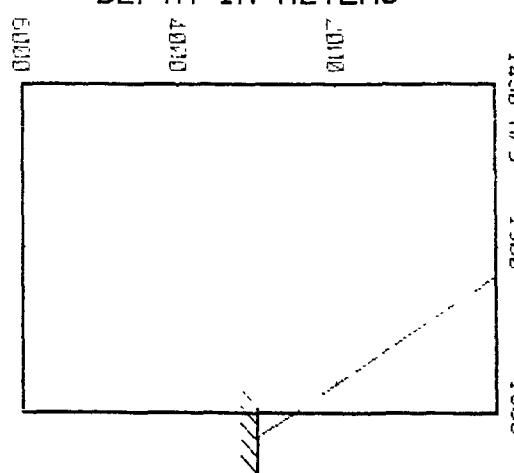
DB LOSS



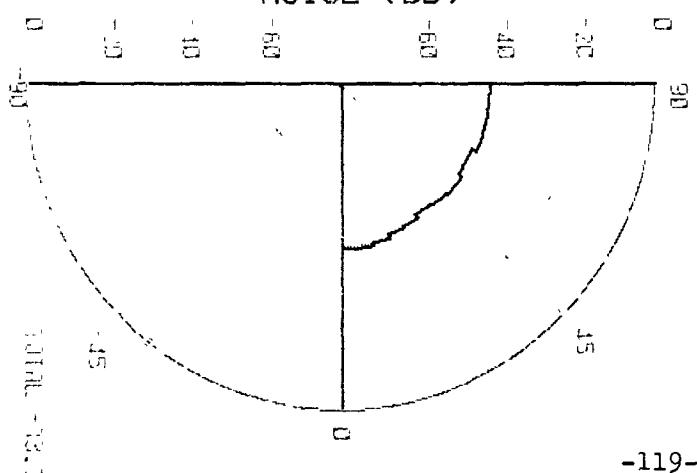
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



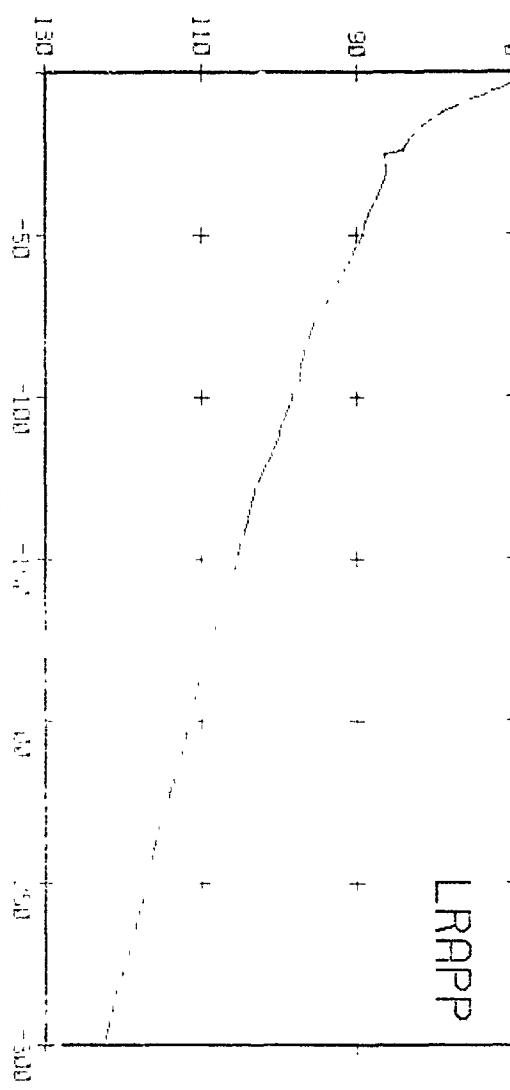
ARR 3B WINTER

S 360 R 9842 F 360

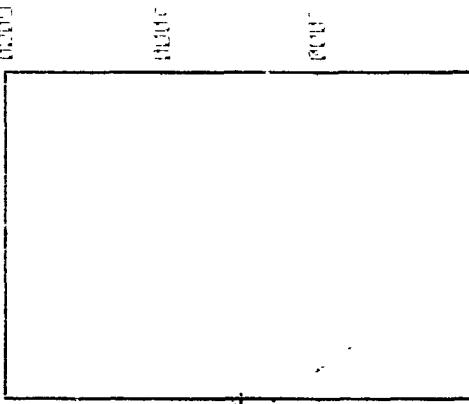
1450 115 1600 1550

LRAAPP

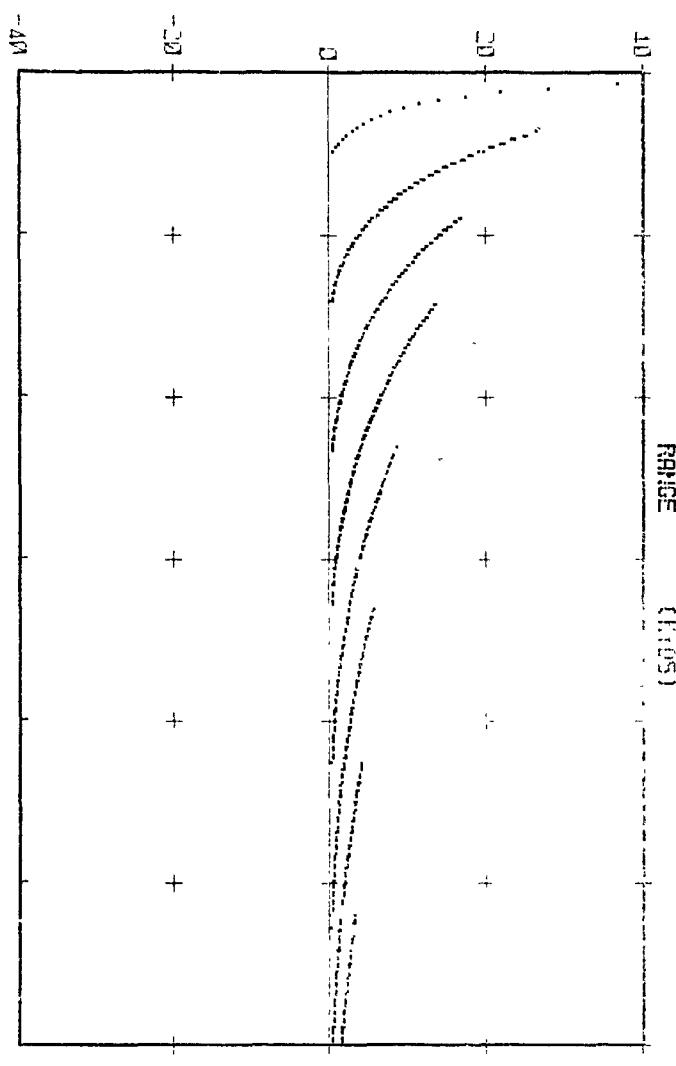
DB LOSS



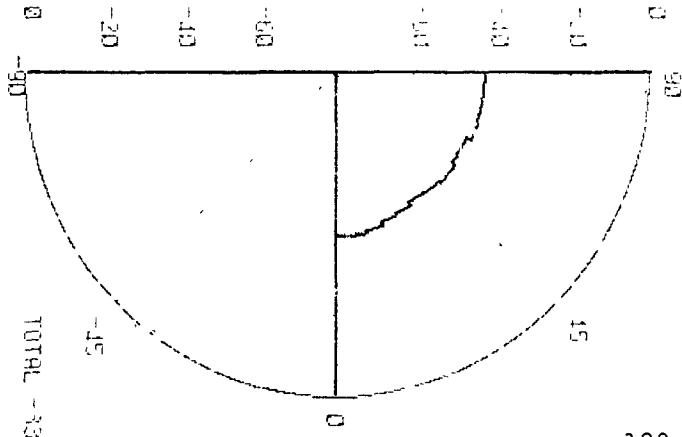
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -33.3 DB

70

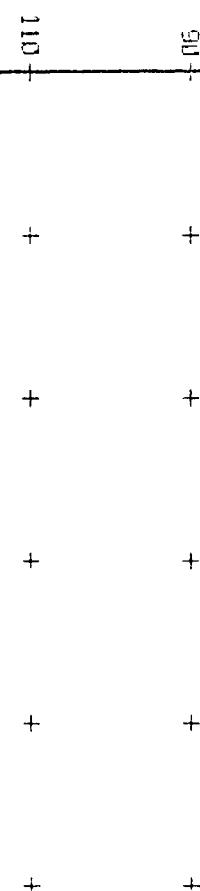
AREA 3B WINTER

S 20 R 60 F 600

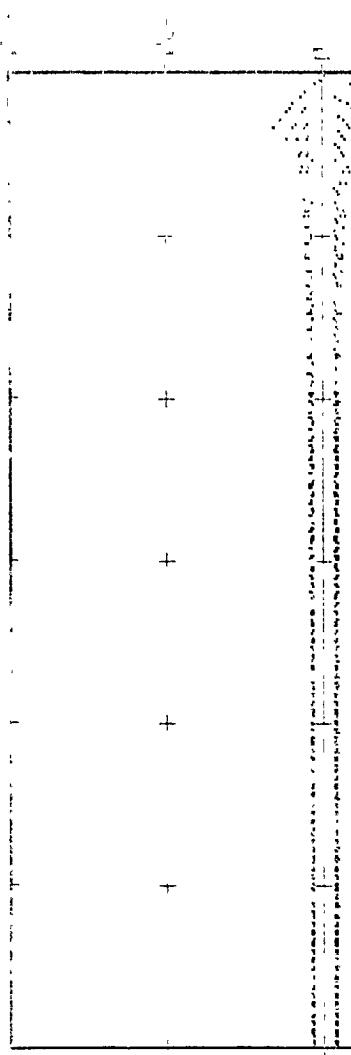
1450 M/S 1500 1550

LRAPP

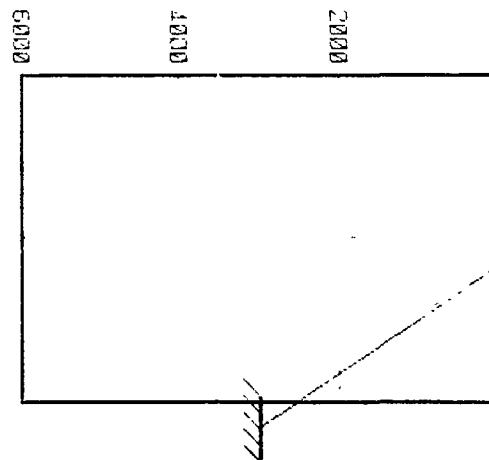
DB LOSS



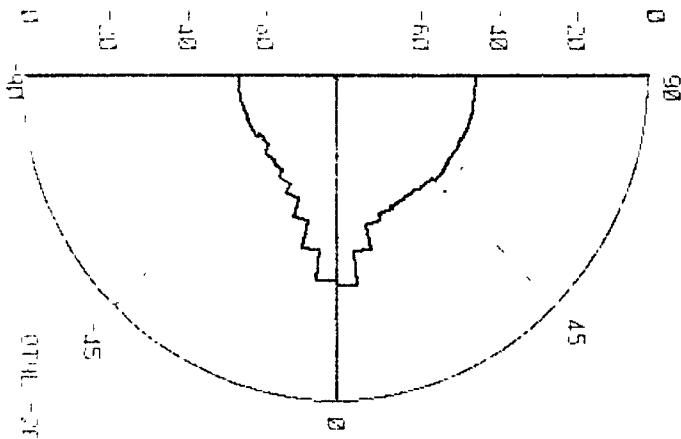
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



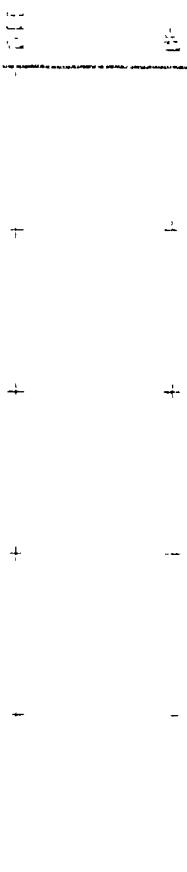
AREA 3B WINNER

S 53 R 68 F 610

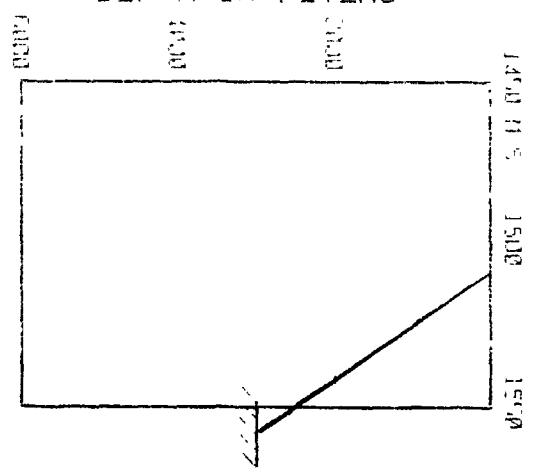
1460 1450 1500 1540

LFBP

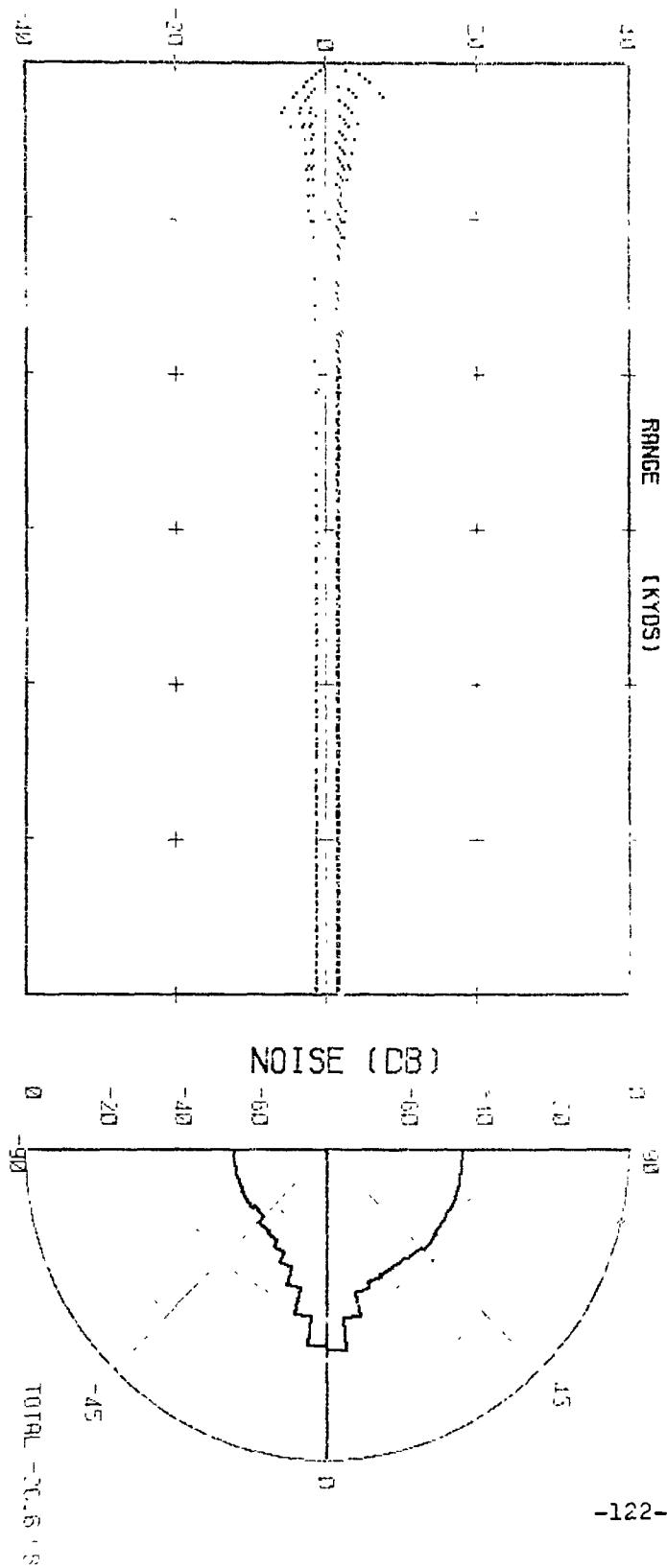
DB LOSS



DEPTH IN METERS



NOISE (DB)



"D

EEER 38 WINTER

S 303 R 69 F 603

145.0 H 3 15.0 15.0

LRAPP

DB LOSS

90

+

+

110

+

+

+

+

+

130
40
-50
-100
-150
-200
-250
-300

RANGE (KMS)

DEPTH IN METERS

2000

4000

6000

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

850

NOISE (DB)

100

105

110

115

120

125

130

135

140

145

150

155

160

165

170

175

180

185

ARRIVAL ANGLE

-20

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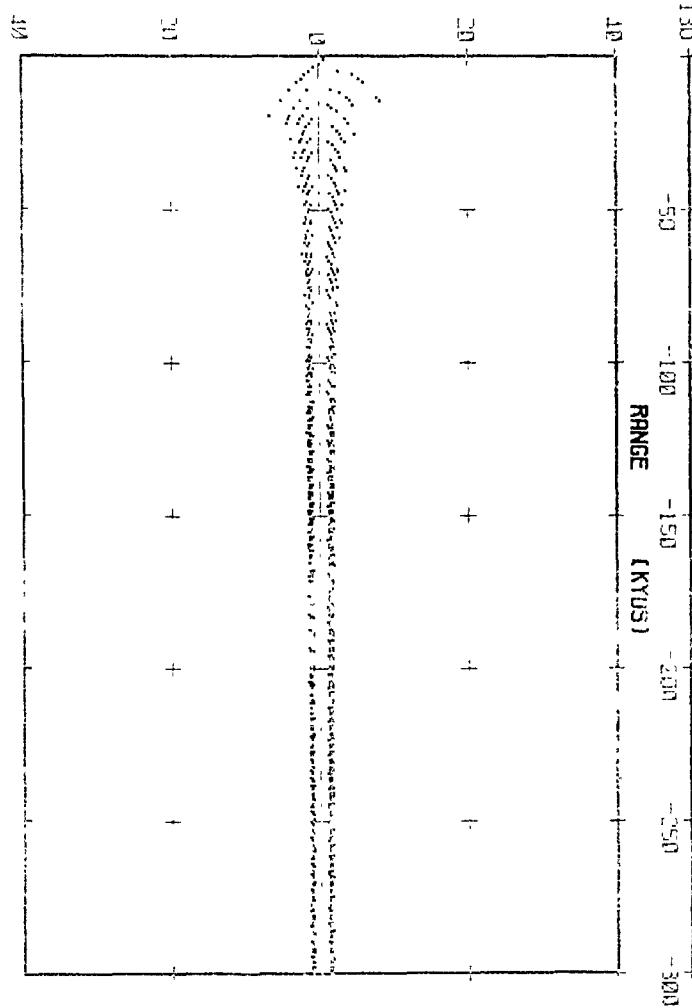
+

-123-

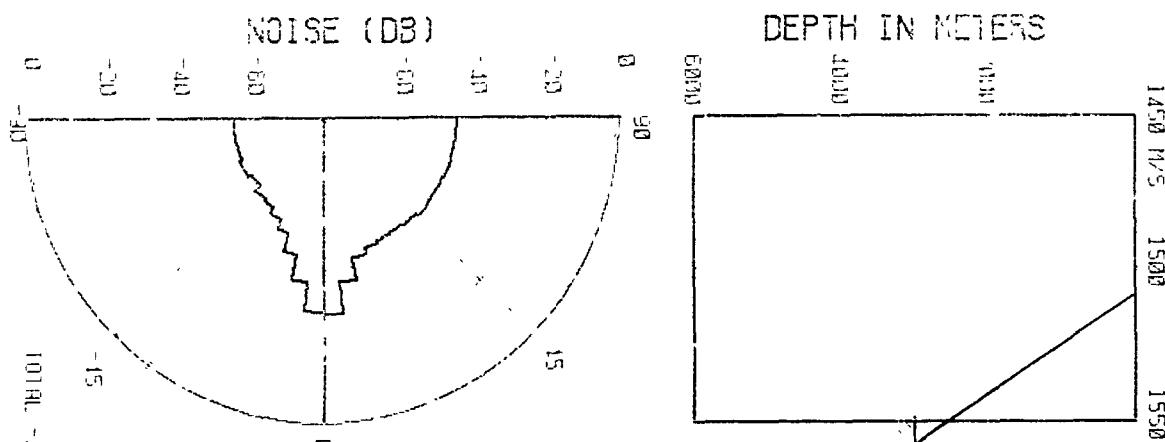
TOTAL - 75.6 DE

ARRIVAL ANGLE

DB LOSS



DEPTH IN METERS



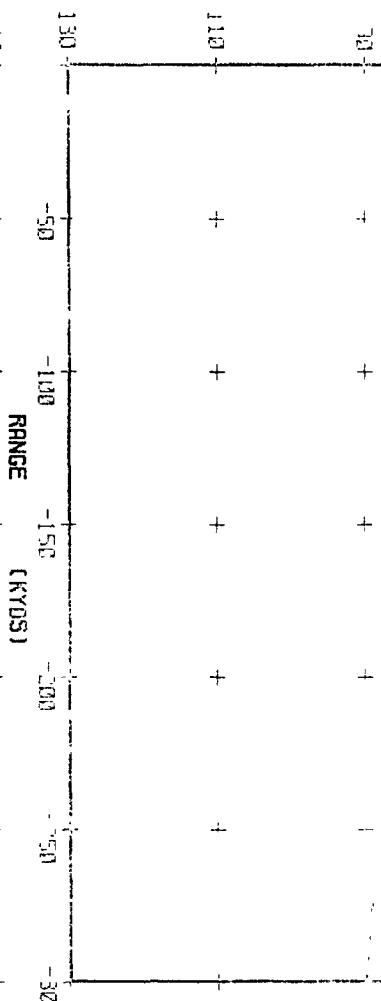
AREA 3B WINTER

S 50 R 16W F 600

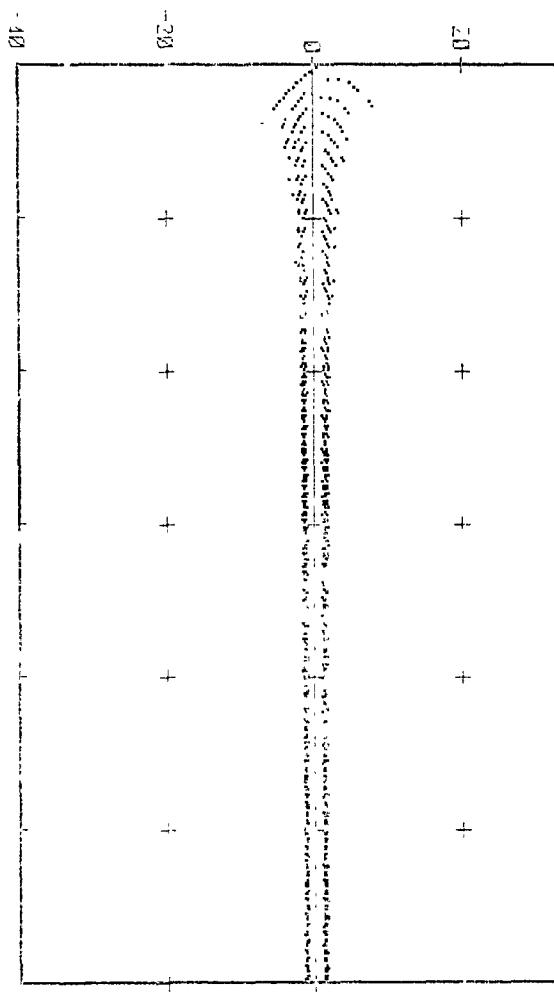
1450 1475 1500 1550

LRAFP

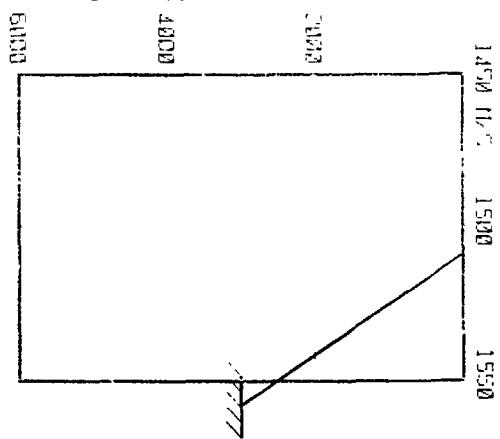
DB LOSS



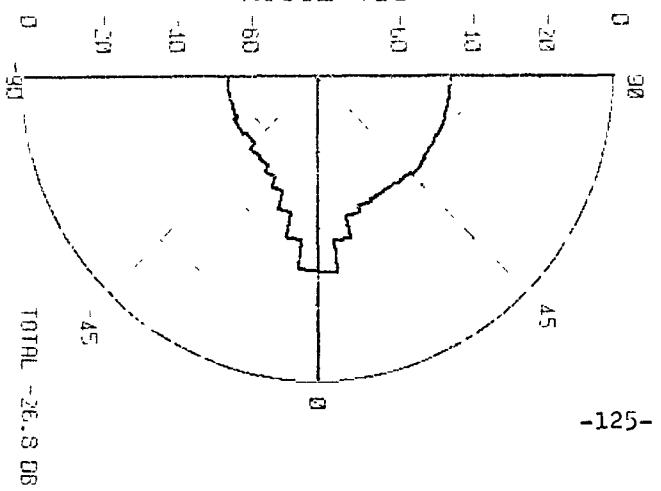
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -26.8 DB

70

AFTER 3B WINTER

S 36° R 100 F 600

1450 1500 1550

DB LOSS

90

+

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+



LRAPP

130

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40

RANGE (KMS)

ARRIVAL ANGLE

20

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DEPTH IN METERS

2000

4000

6000

8000

10000

12000

0

20

40

60

80

100

30

50

70

90

110

130

45

65

85

105

125

145

55

95

115

135

155

175

65

105

125

145

165

185

75

115

135

155

175

195

85

125

145

165

185

205

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135

155

175

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215

105

145

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185

205

225

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155

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525

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495

515

535

555

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485

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585

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555

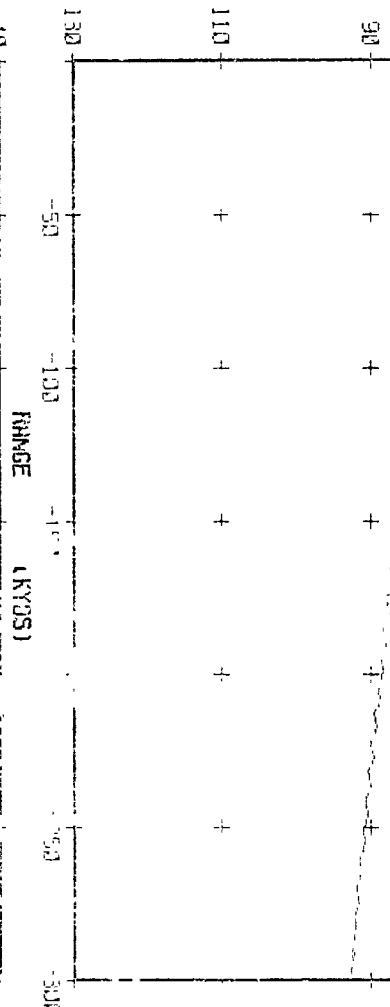
AREA 3B WINTER

S 20 R 300 F 600

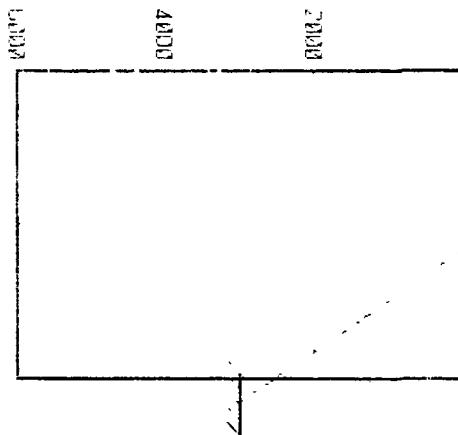
1450 M/S 150M 1550

LRAFP

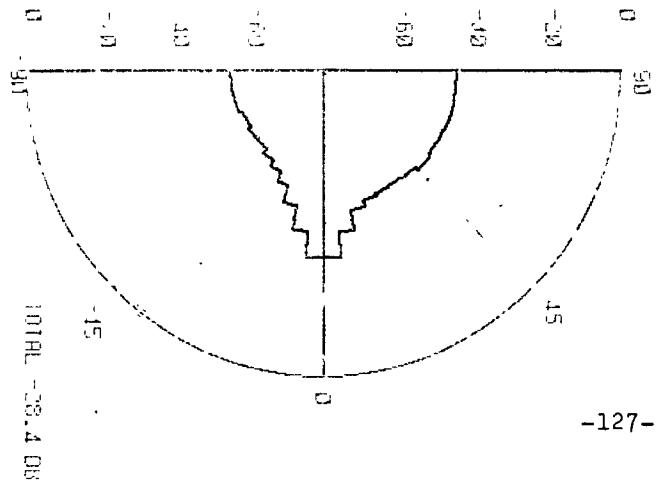
DB LOSS



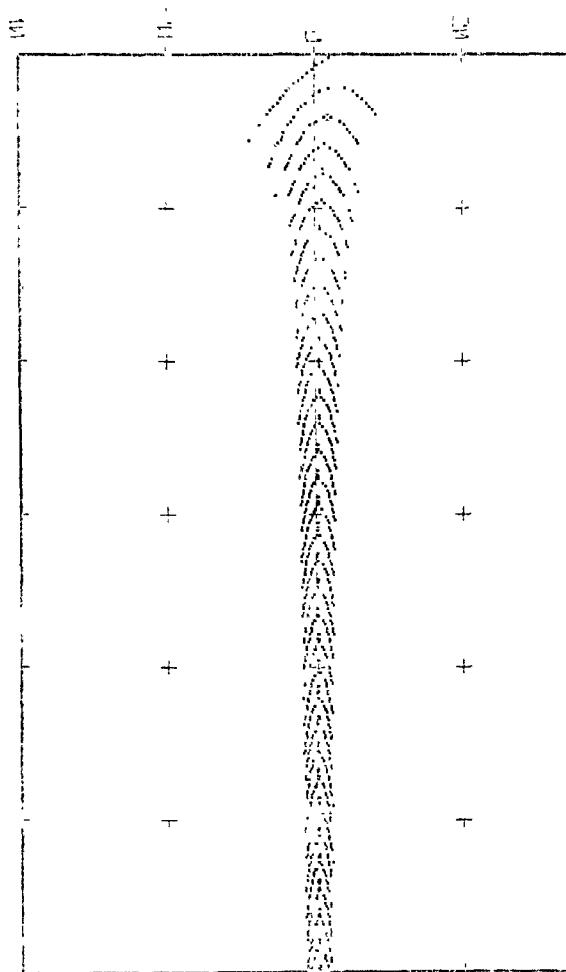
DEPTH IN METERS



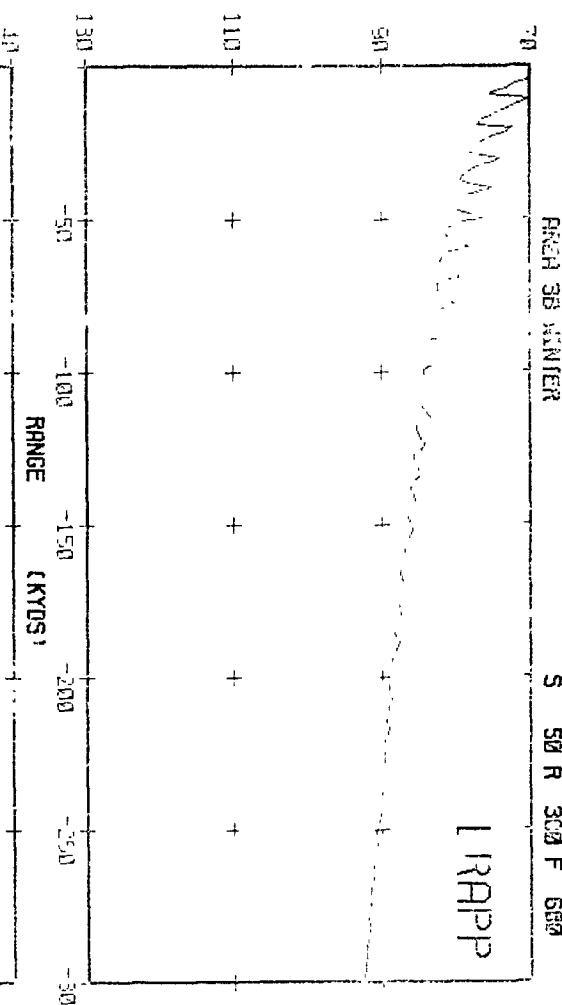
NOISE (DB)



ARRIVAL ANGLE



DB LOSS

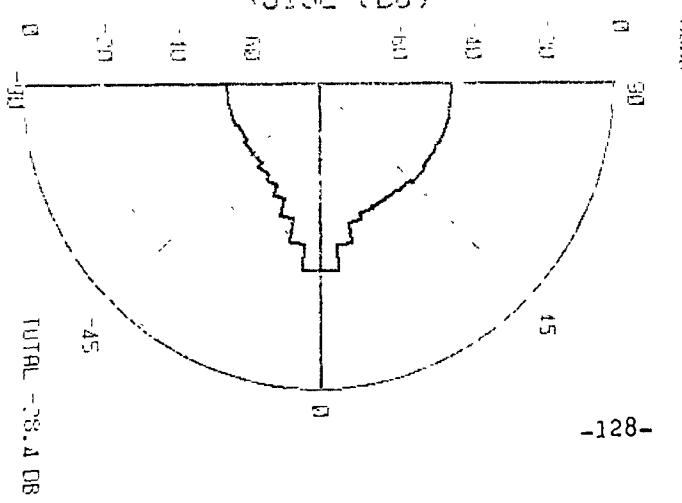


L RAPP

HIGH 3B WINTER S 50 R 3C9 F 659

1450 11.5 1500 1550

NOISE (DB)



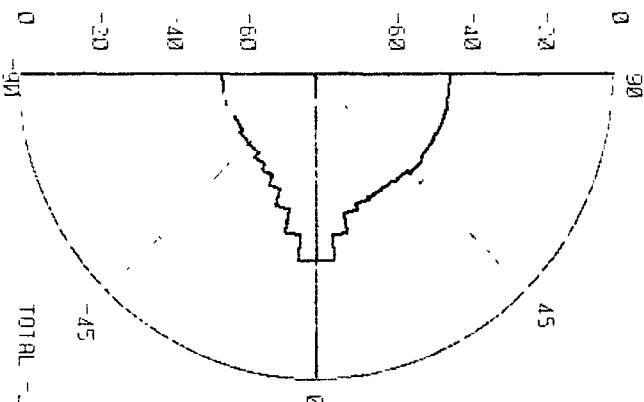
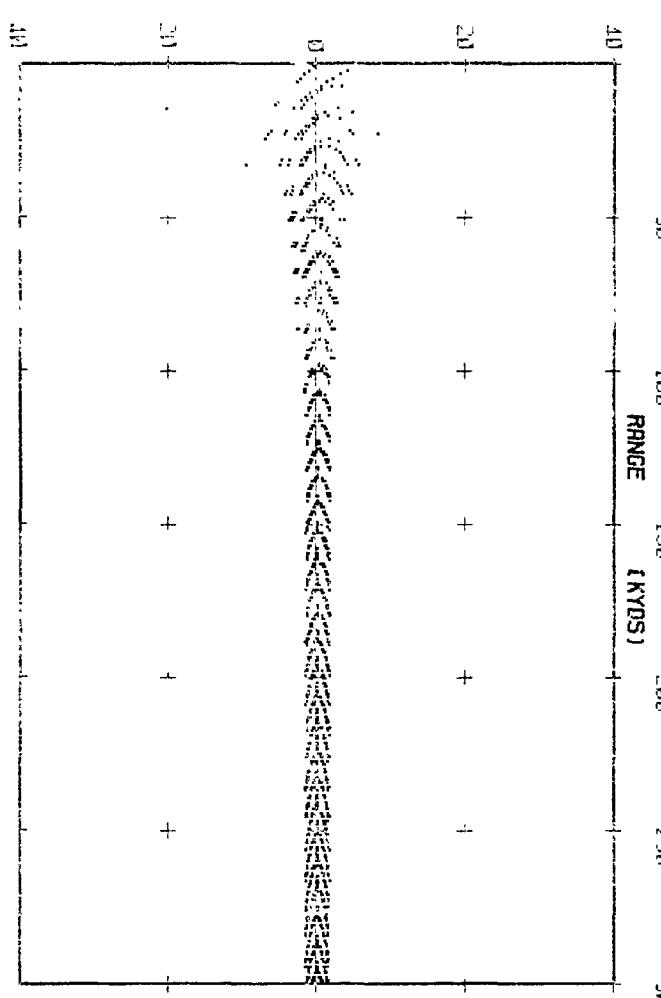
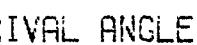
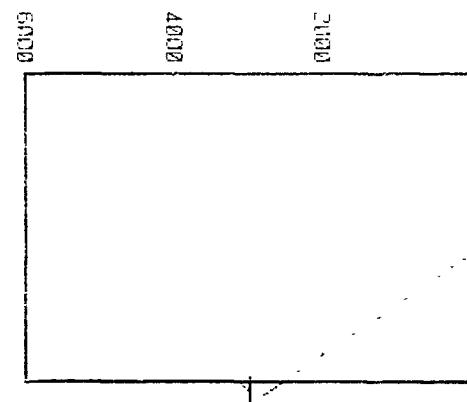
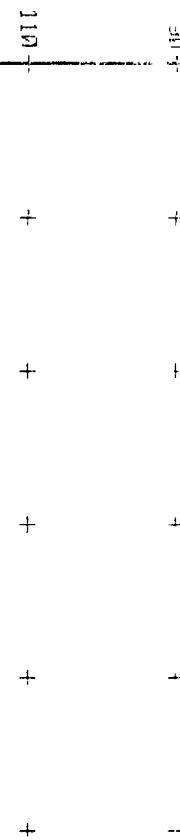
-128-

TOTAL -73.4 DB

HISTORICAL

5385

1450 H. 5. 1536 1556



70

ARR 38 WINTER

S 20 R 500 F 600

1450 11.5 1500 1550

LRAAPP

50+

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DB LOSS

130
110
100
40
-50
-120
-150
-200
-250
-300

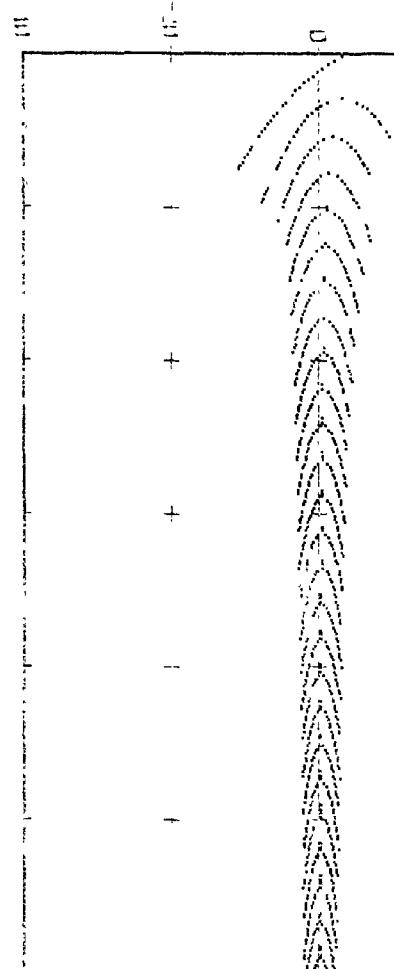
RANGE (KYDS)

110
100
40
-50
-120
-150
-200
-250
-300

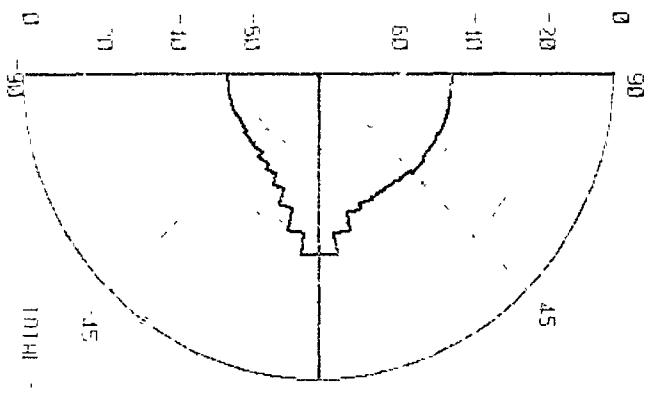
DEPTH IN METERS

2000
4000
6000

ARRIVAL ANGLE



NOISE (DB)



-130-

101141 - 24.5 db

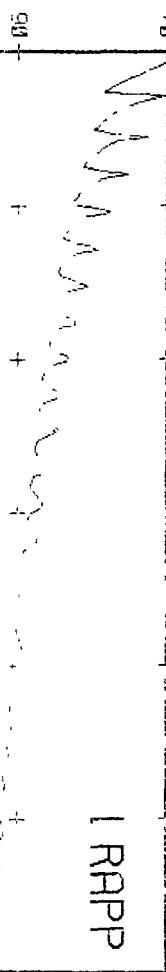
AREA SE. WINTER

S 58 R 56 F 685

1450 11.5 1500 1570

I RAPP

DB LOSS

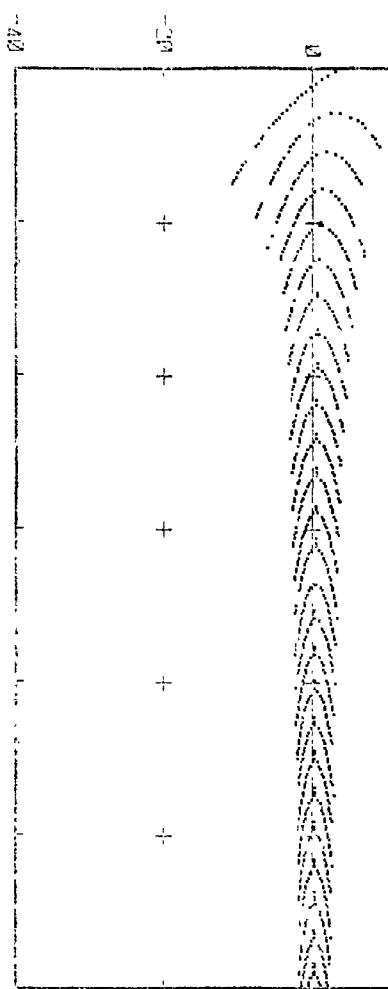


DEPTH IN METERS

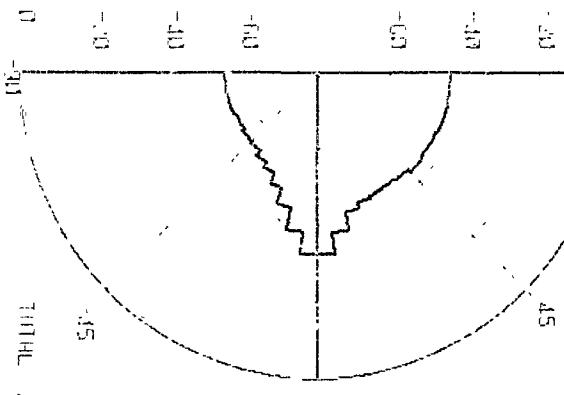
130
100
10
-50
-100
-150
-200
-250
-300

6000
4000
2000

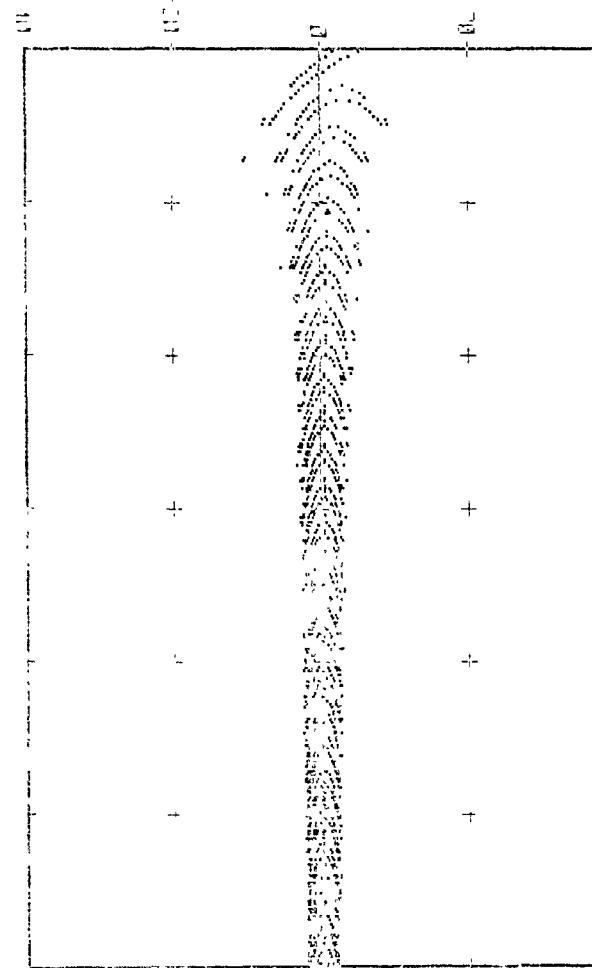
ARRIVAL ANGLE



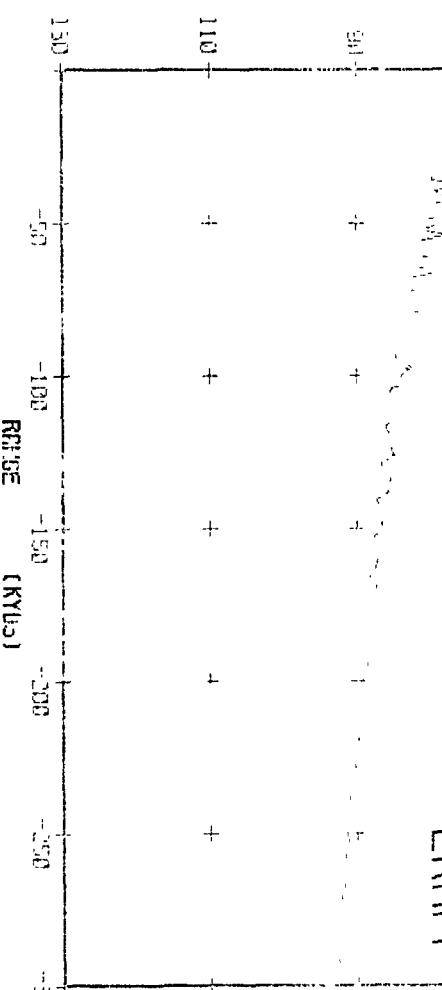
NOISE (DB)



ARRIVAL ANGLE



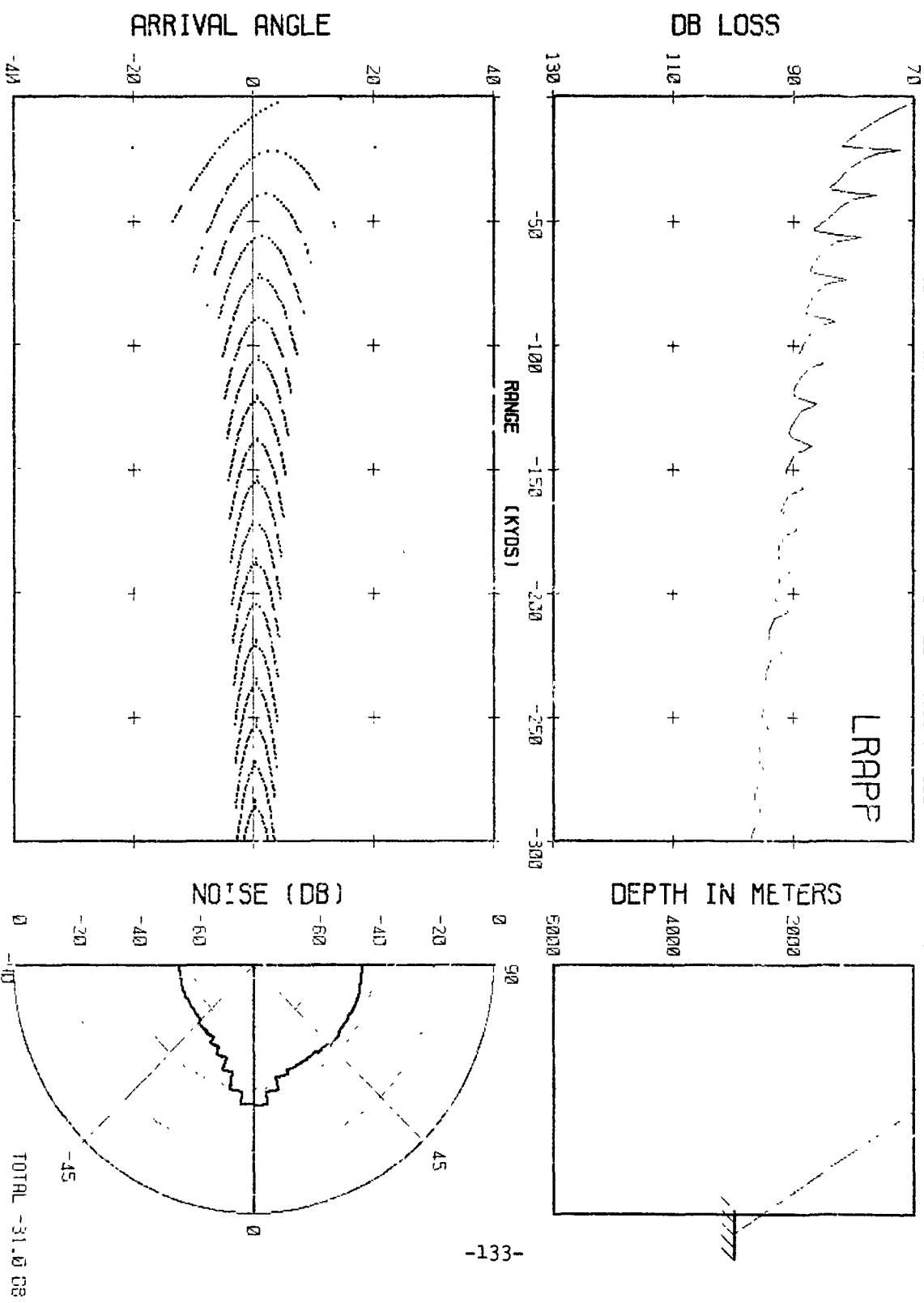
DB LOSS



AREA 3B WINTER

S 20 R 1888 F 688

1450 1455 1500 1550



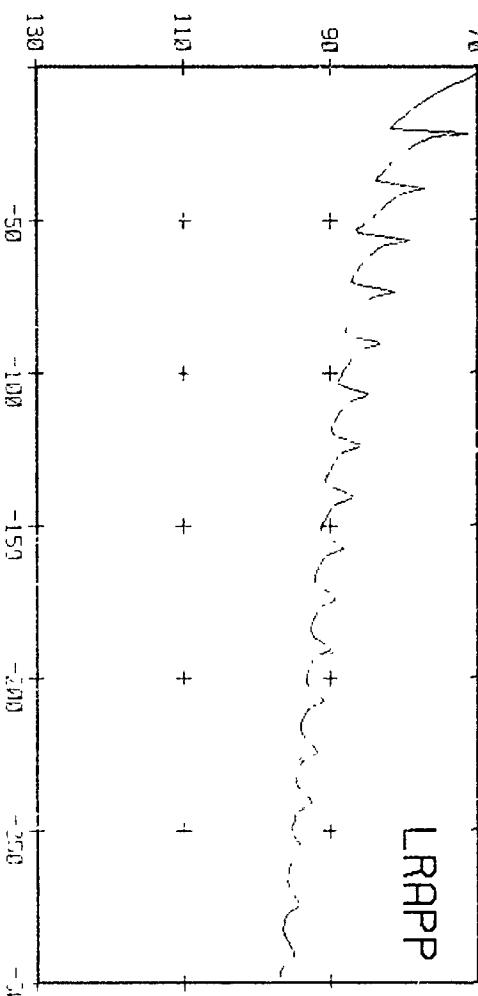
AREA 38 WINTER

3 50 R 100G F 600

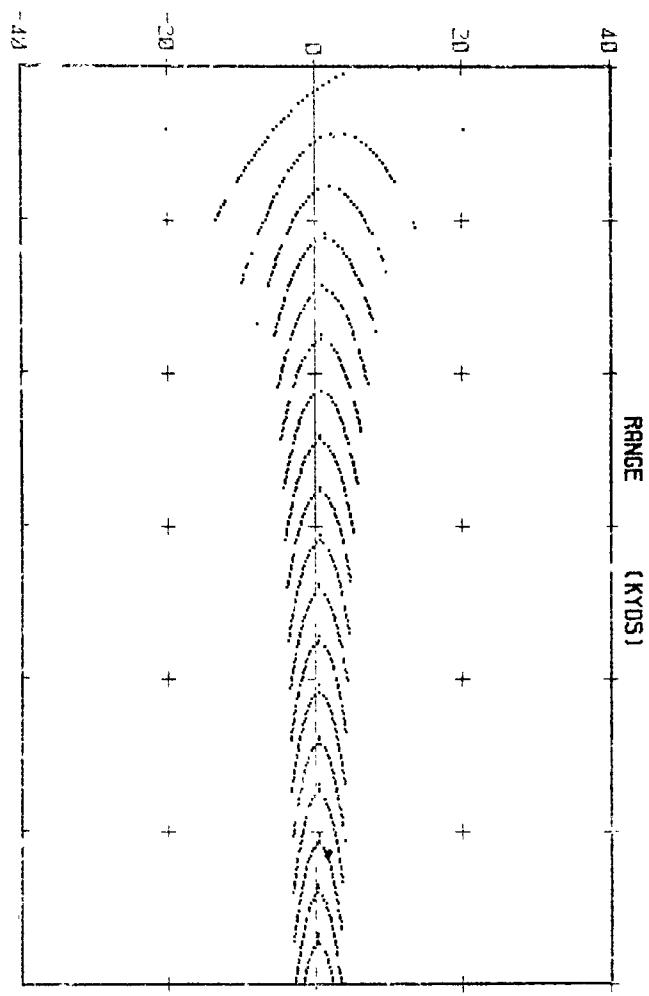
1450 Hz 1500 1550

LRAFP

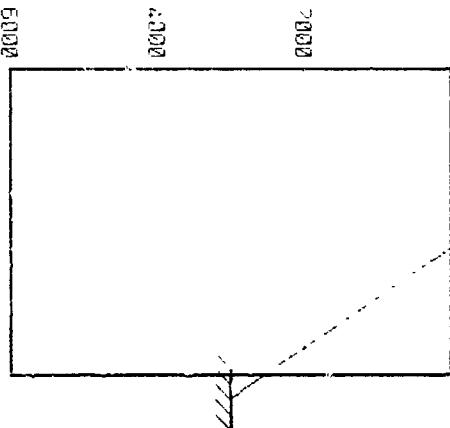
DB LOSS



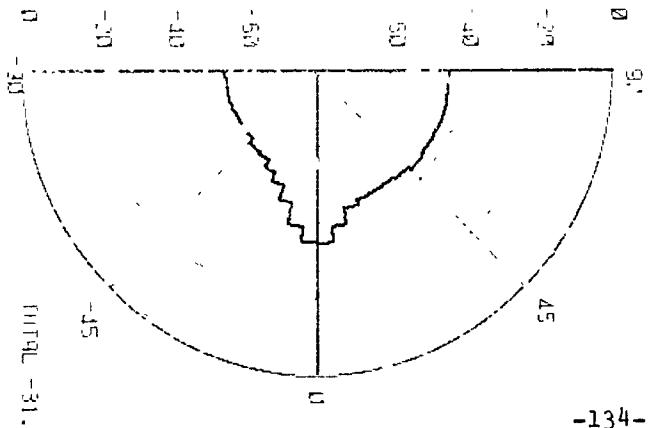
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



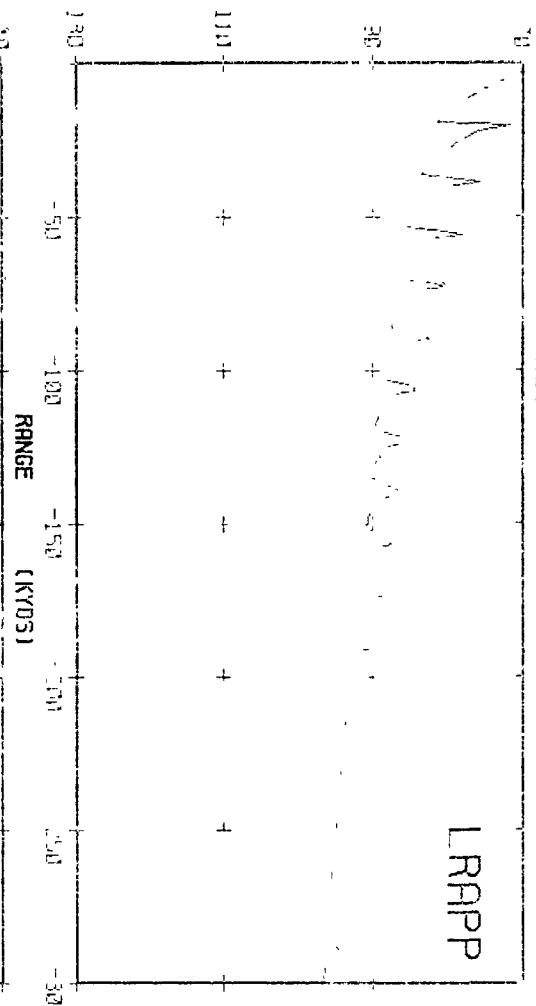
AREA 3B WINTER

S 36° 9' 10.6" F 686

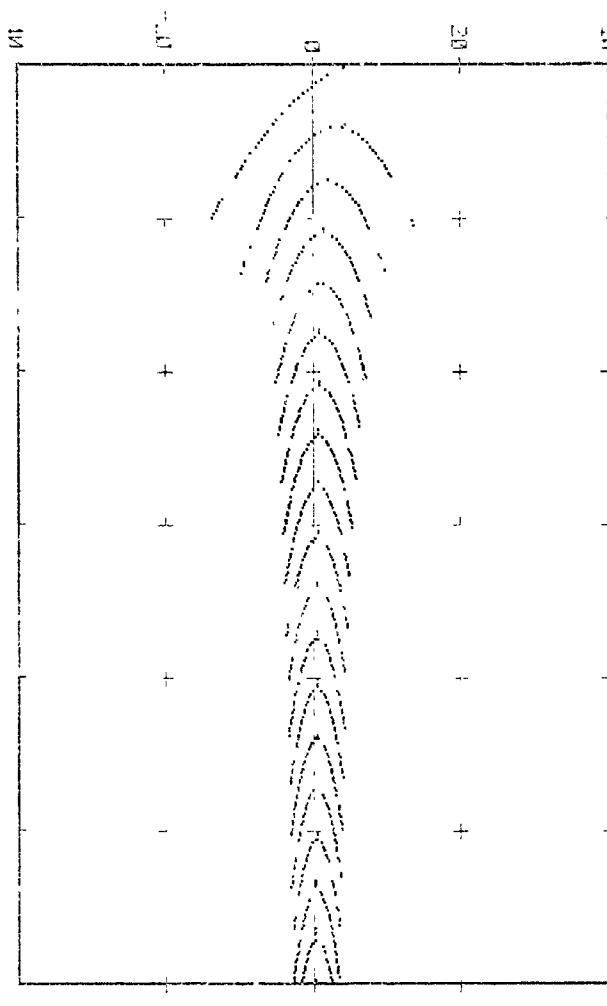
14° 41' 15.0" 155° 155.0

L RAPP

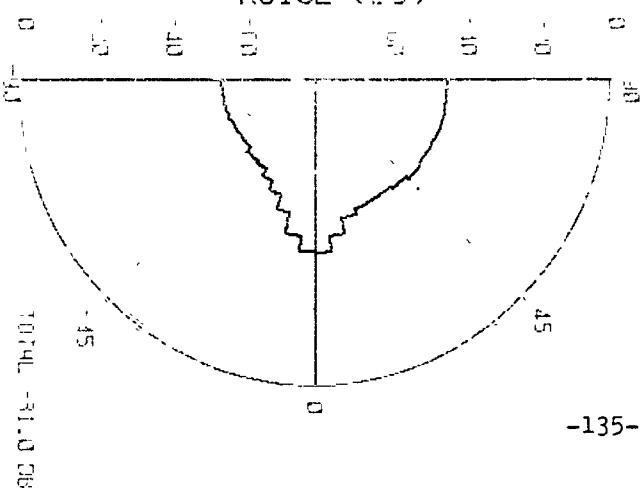
DB LOSS



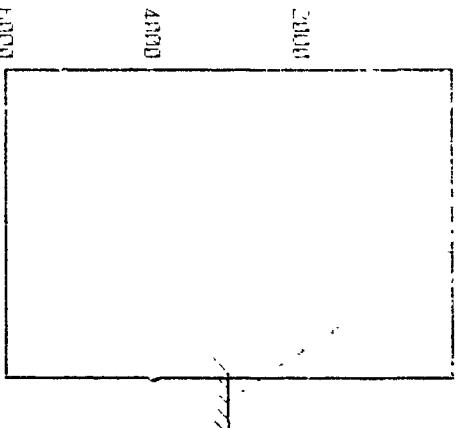
ARRIVAL ANGLE



NOISE (dB)



DEPTH IN METERS



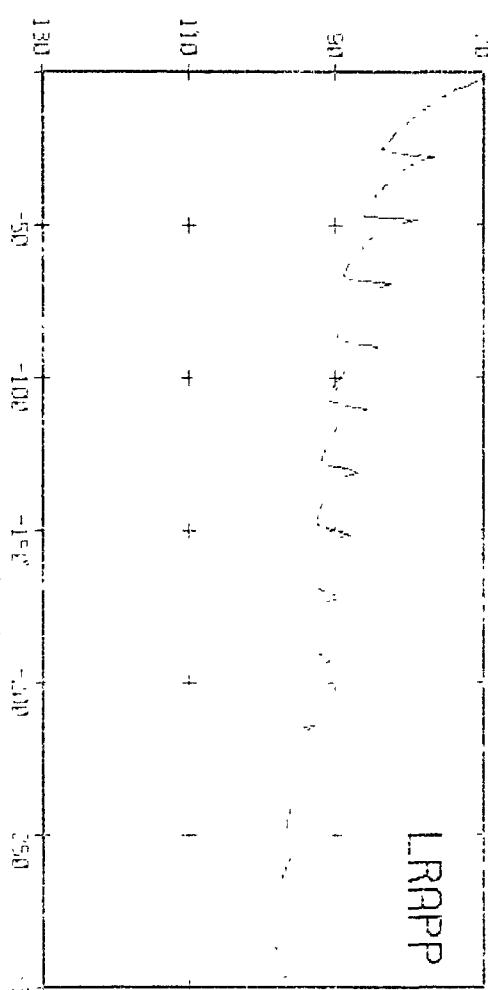
FEBR 30 WINTER

S 20 R 130.1 F 682

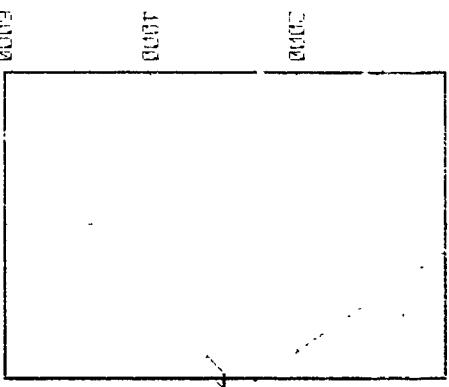
1450 11.5 1500 1550

LRAFP

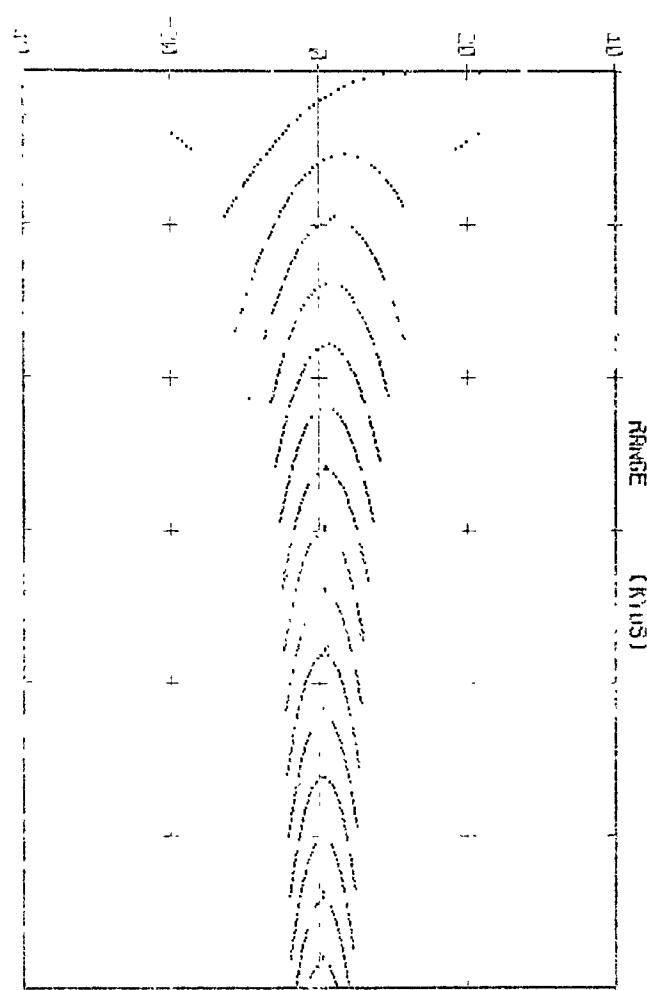
DB LOSS



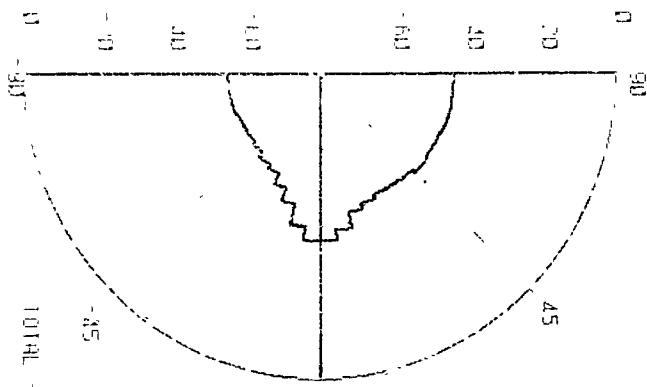
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (dB)



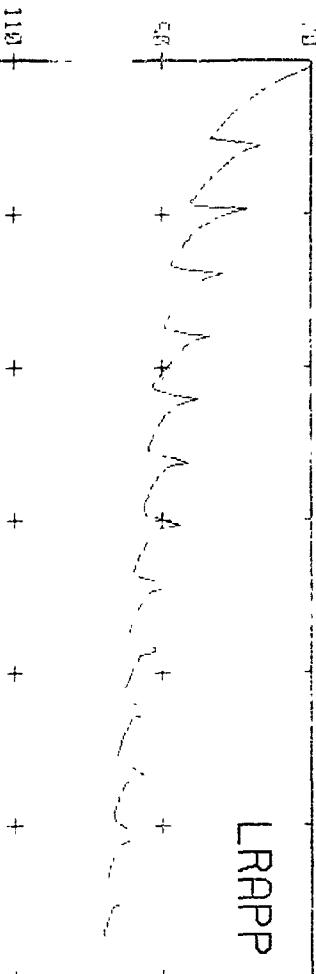
AREA 3B WINTER

S 50 R 1500 F 600

1430 1450 1500 1550

LRAAPP

DB LOSS

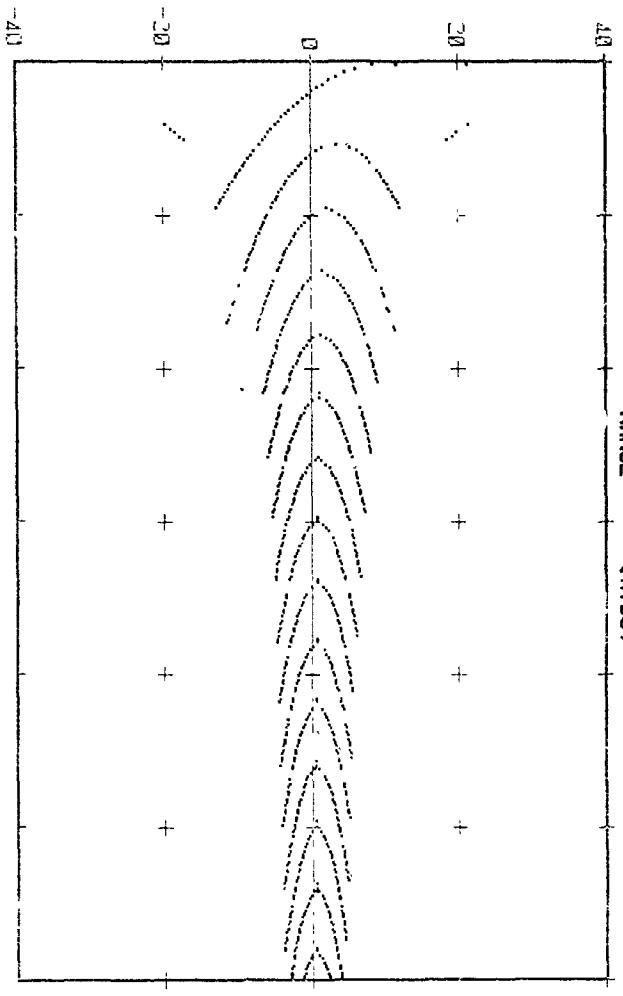


DEPTH IN METERS

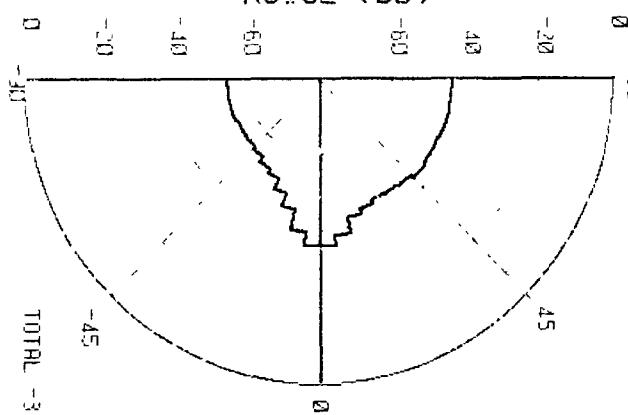
130
110
90
70
50
30
10
0

-2000
-4000
-6000

ARRIVAL ANGLE



NOISE (DB)



TOTAL -31.7 DB

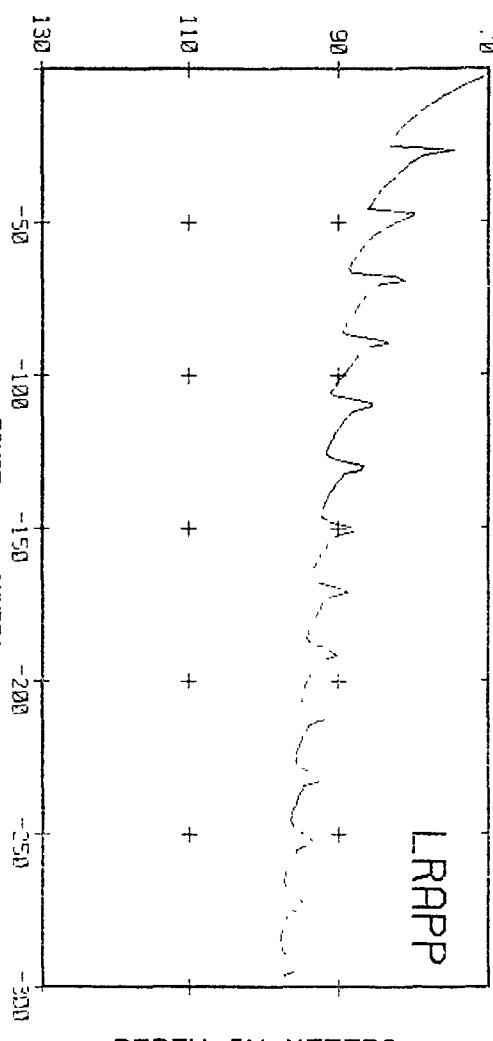
AREA 3B WINTER

S 38° R 15° F 6°

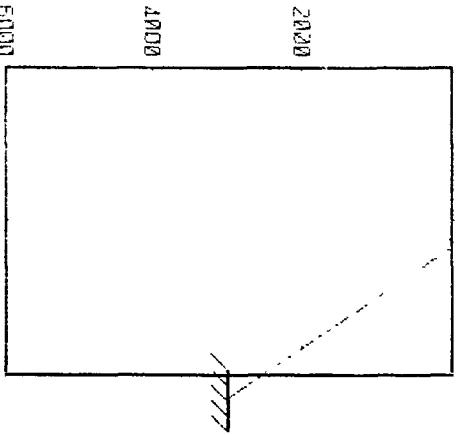
1450 M/S 1500 1550

LRAPP

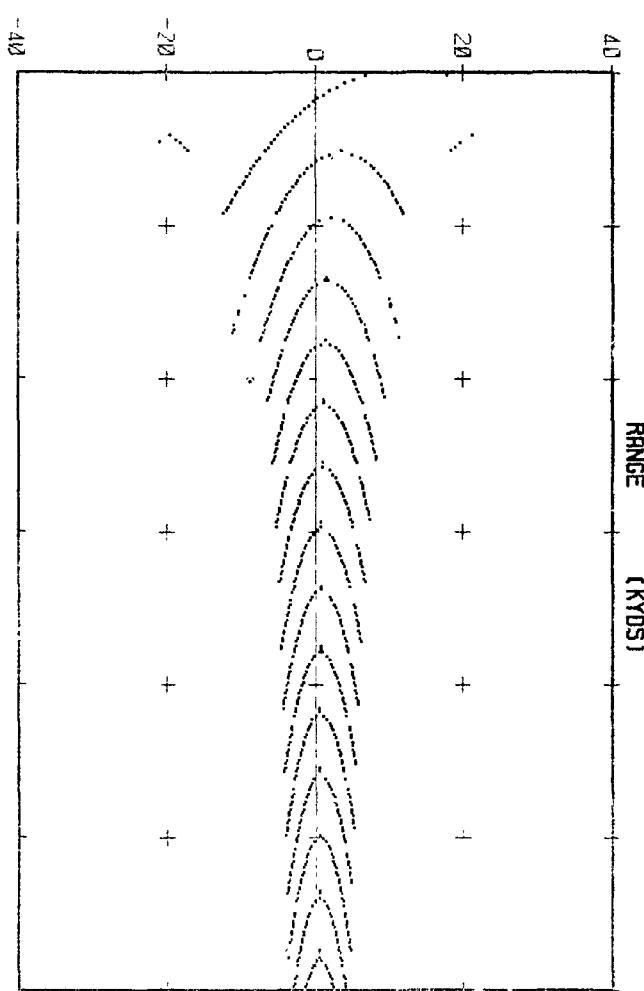
DB LOSS



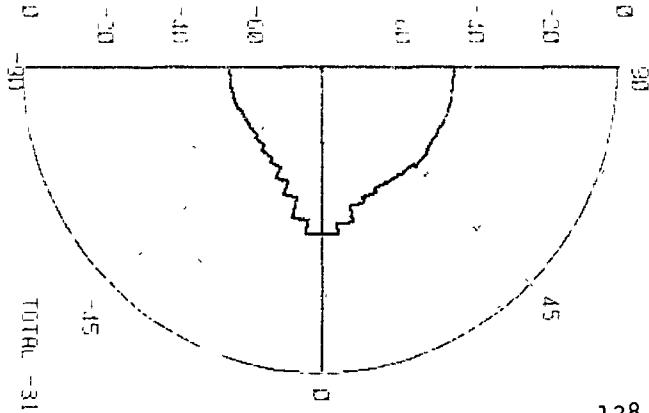
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



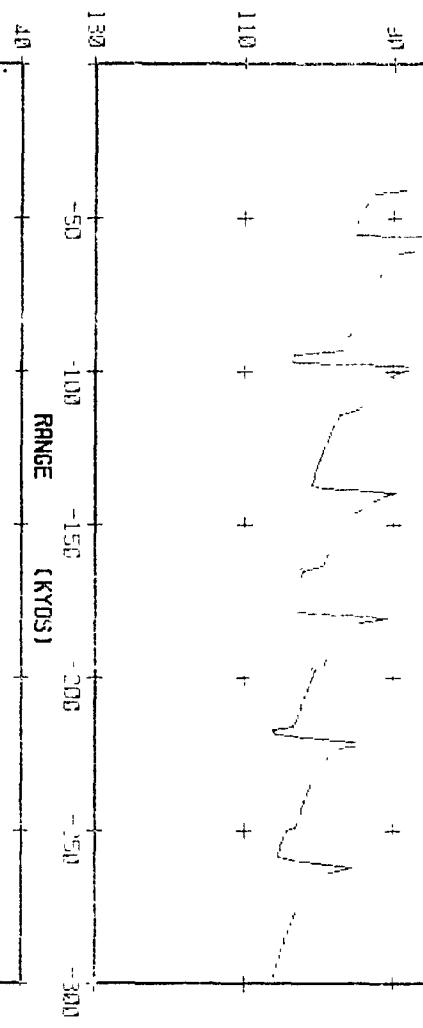
AIRER 3B WINTER

S 20 R 6060 F 600

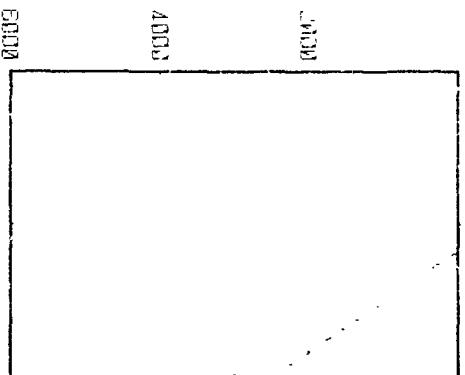
1450 1500 1550

L RAPP

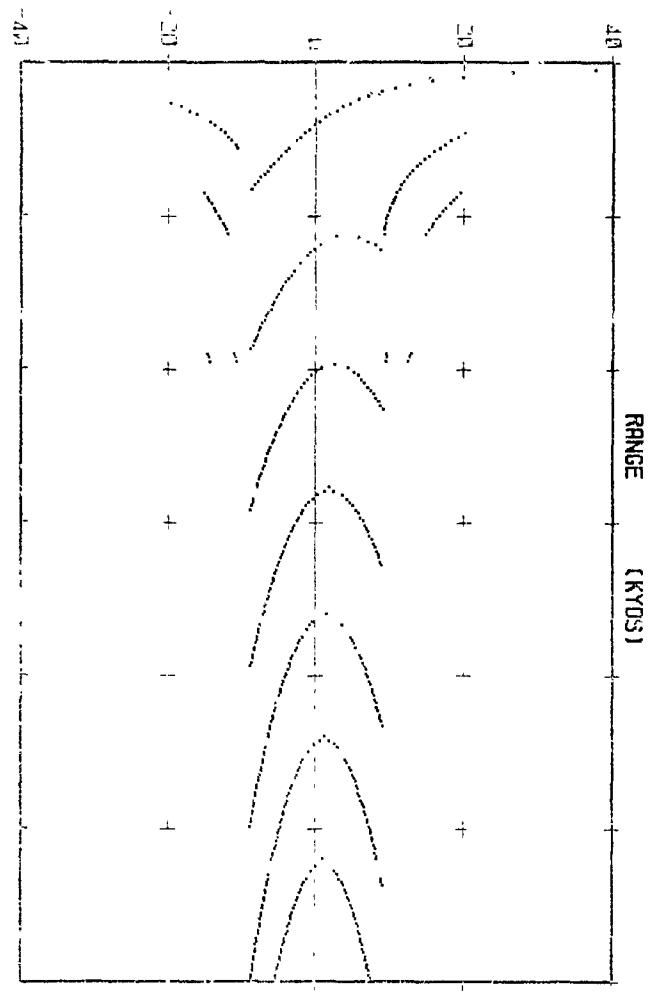
DB LOSS



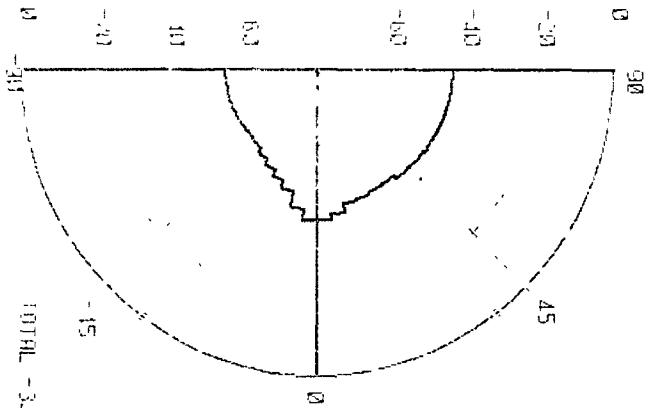
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL - 34.2 DB

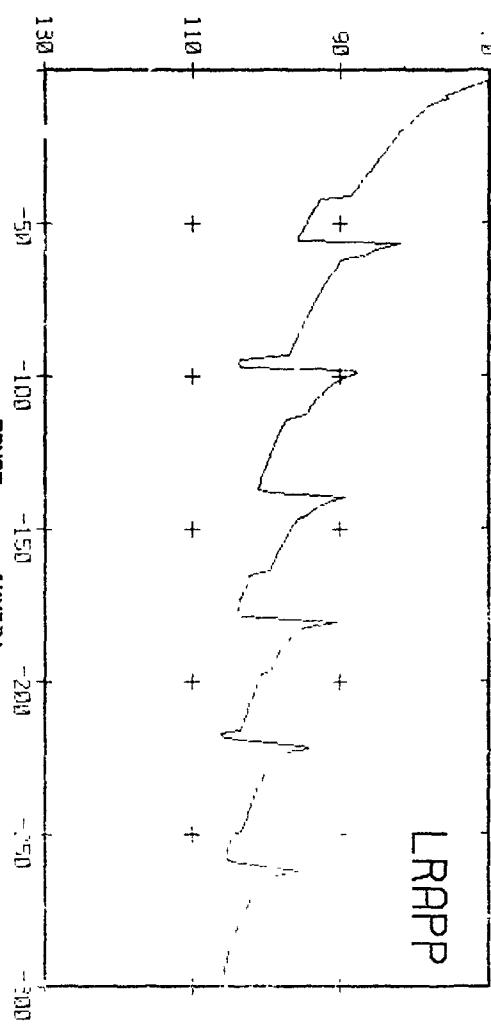
AREA 3B WINTER

S 50 R 6000 F 600

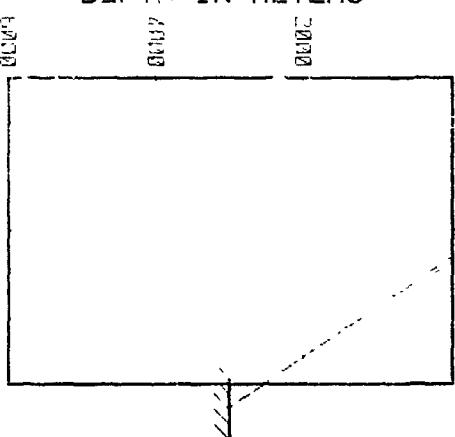
1450 1/5 1500 1550

LRAFP

DB LOSS

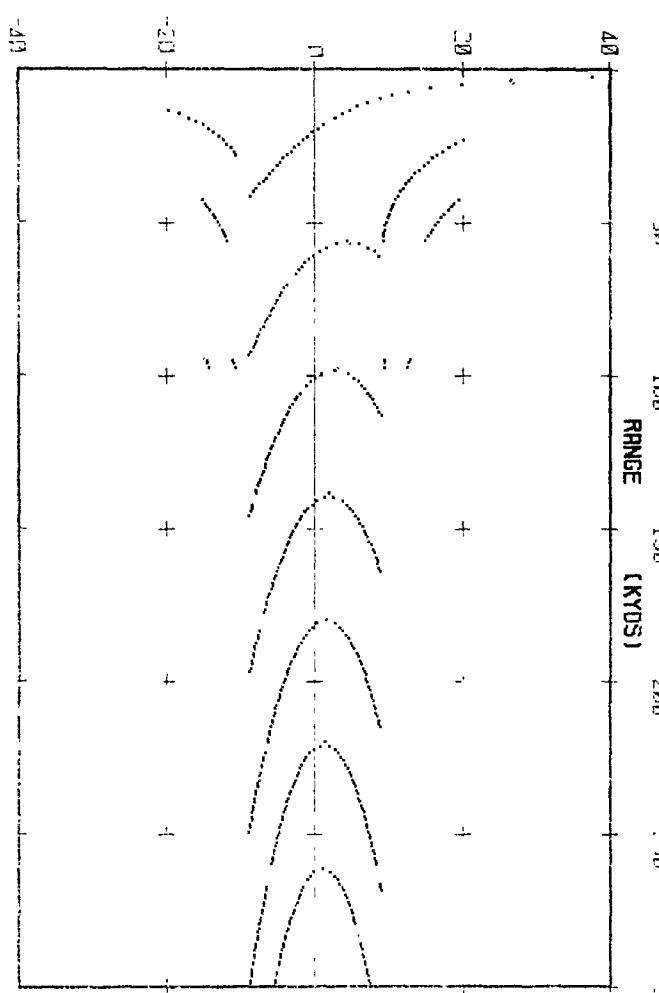


DEPTH IN METERS

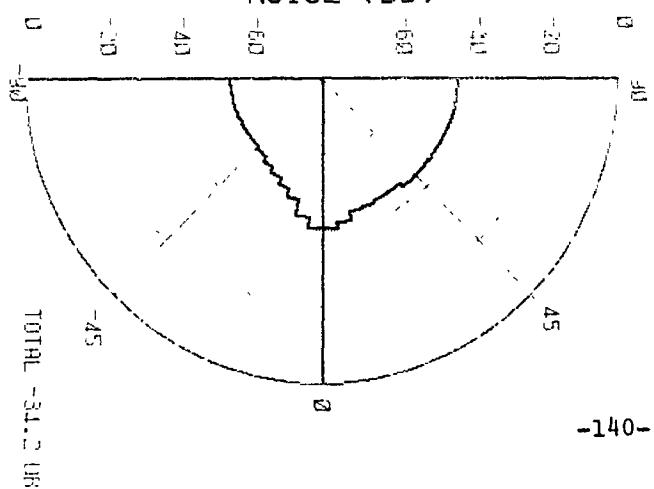


NOISE (dB)

ARRIVAL ANGLE



-4P



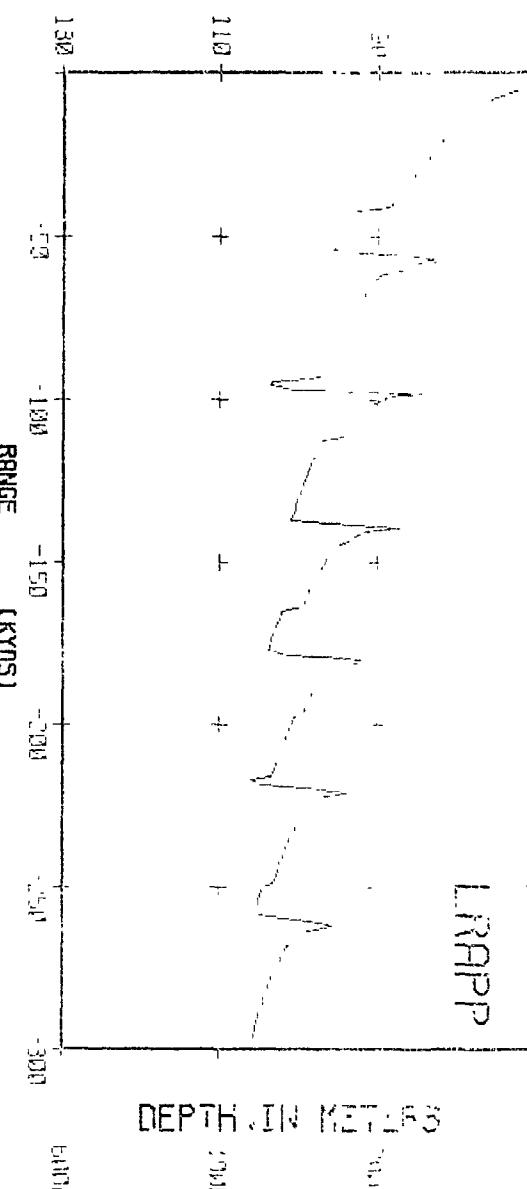
TOTAL -34.2 dB

-140-

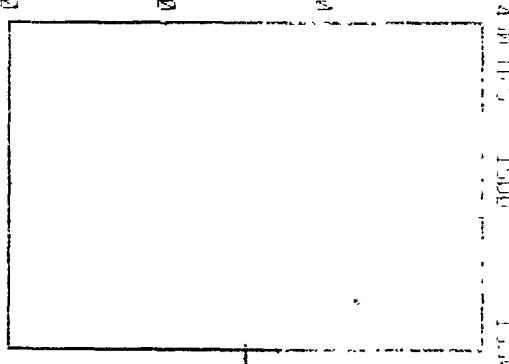
14' 3" H.L.S. 1500 1550
F 300 R 66° 3 F 630

L RAPP

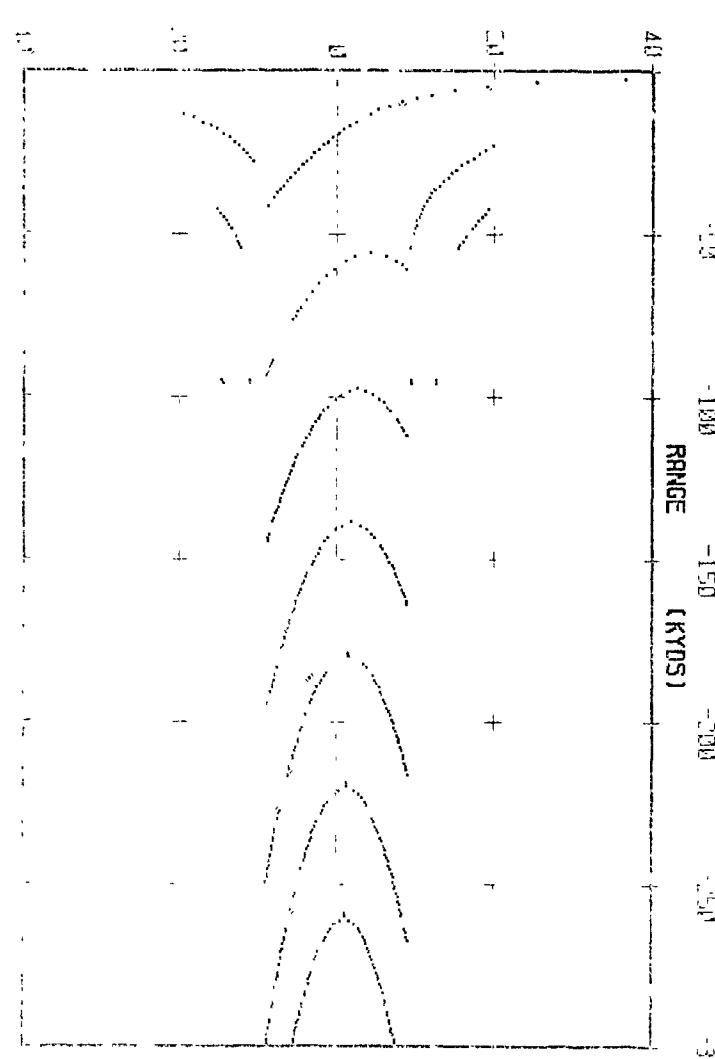
DB LOSS



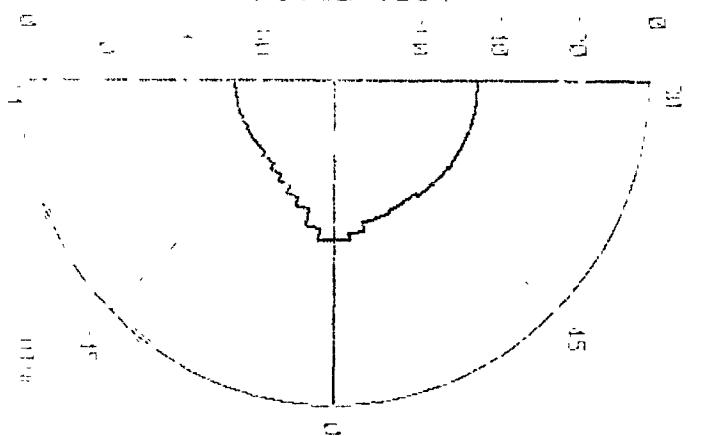
DEPTH IN METERS



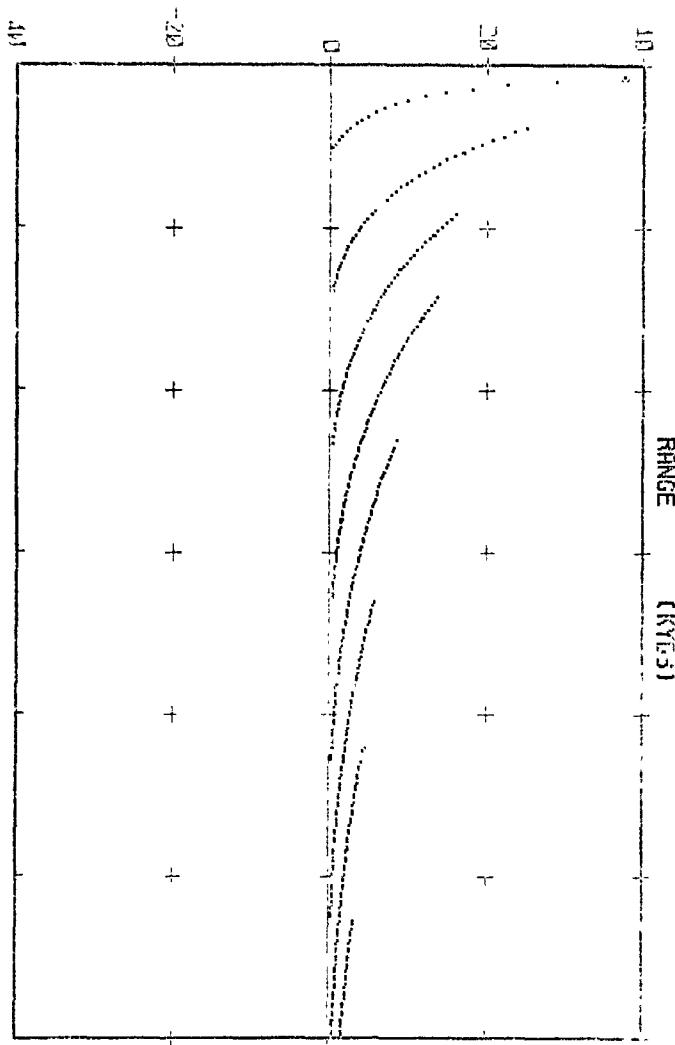
ARRIVAL ANGLE



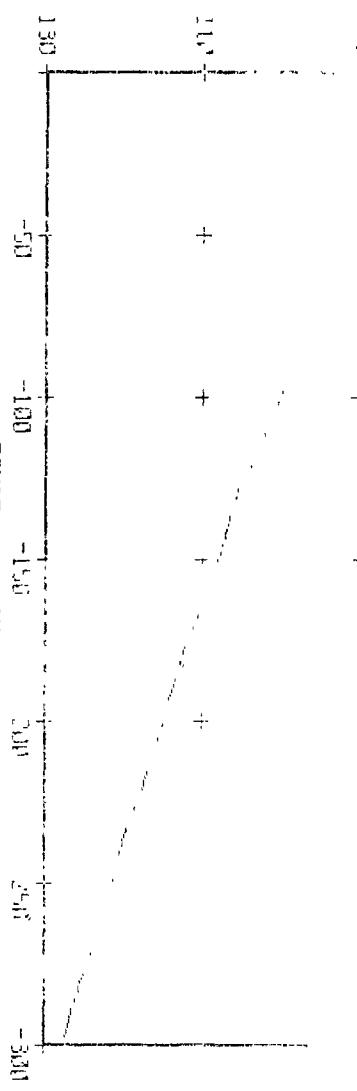
NOISE (DB)



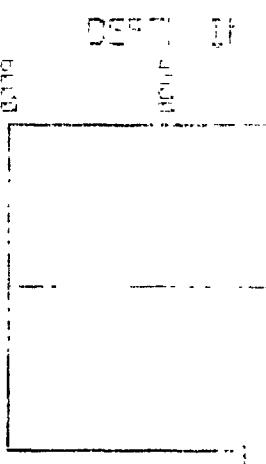
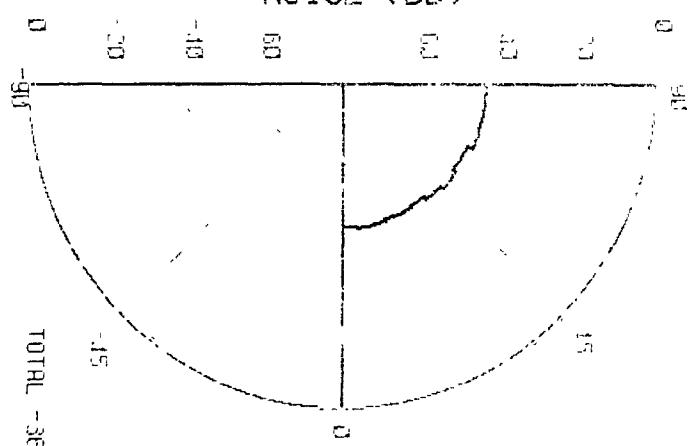
ARRIVAL ANGLE



DB LOSS



NOISE (DB)



74

REF 3B WINTER

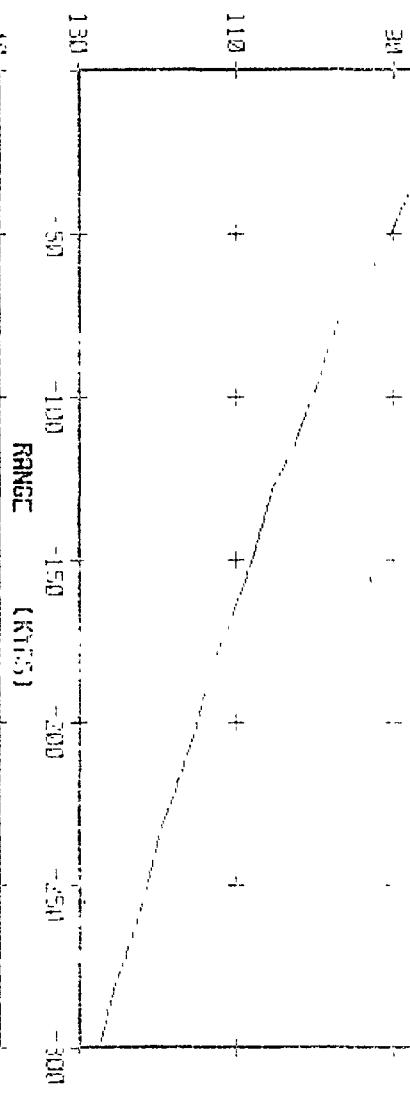
S 50 R 9842 F 8W

1532

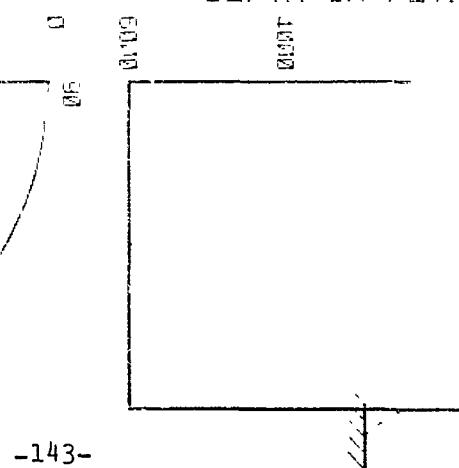
1550

L RAPP

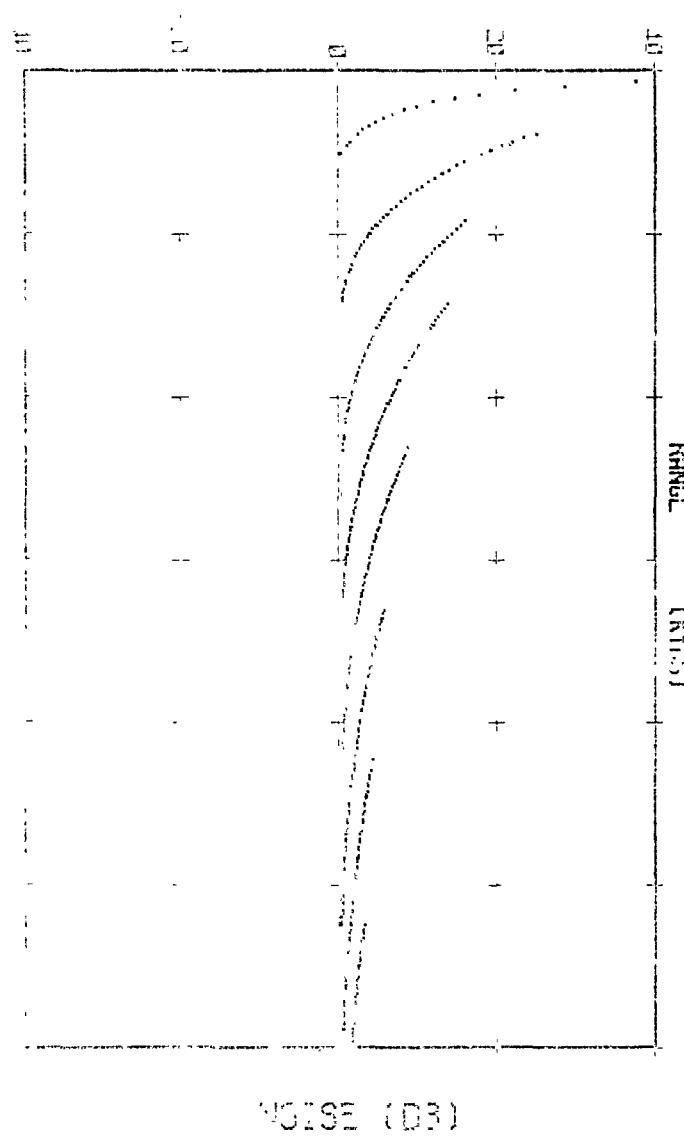
DB LOSS



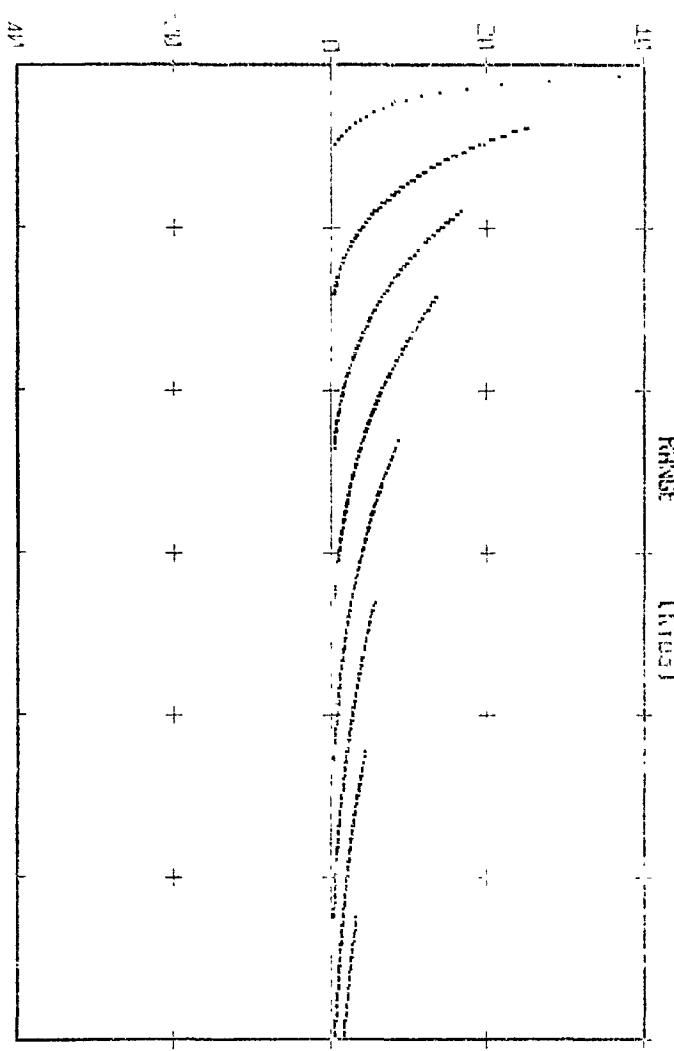
DEPTH IN METERS



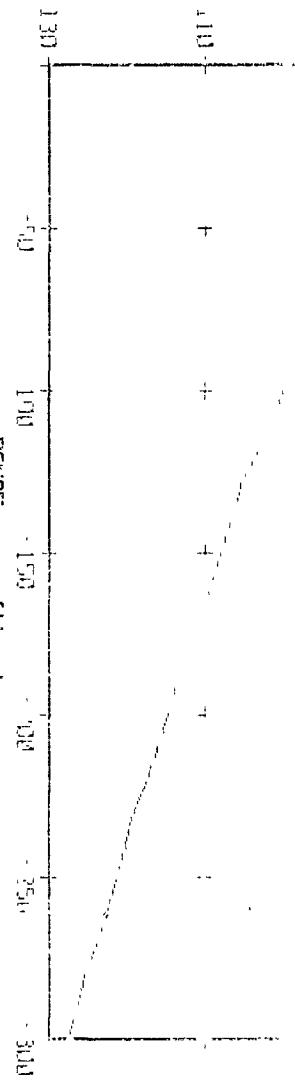
ARRIVAL ANGLE



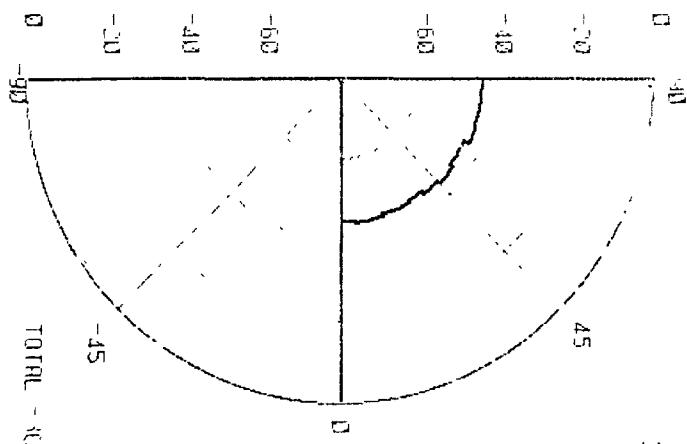
ARRIVAL ANGLE



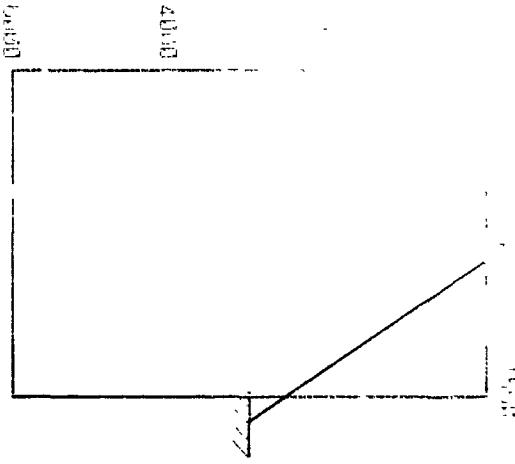
DB LOSS



NOISE (DB)



DEPTH

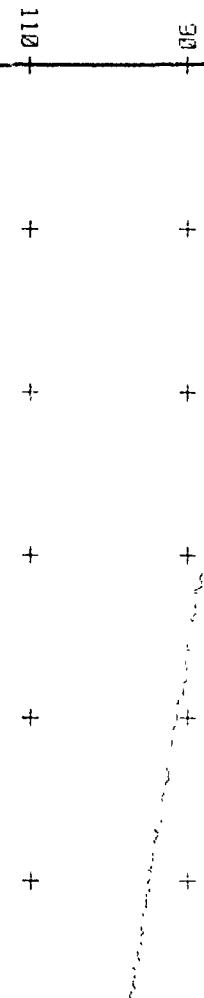


TOTAL - 45.8 dB

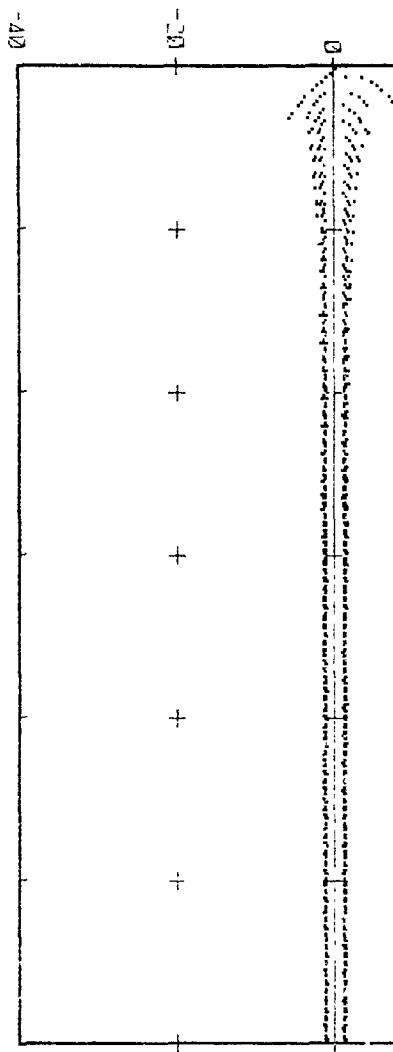
70 AREA 3B WINTER S 20 R 60 F 900 1450 145 1530 1530

LRAFP

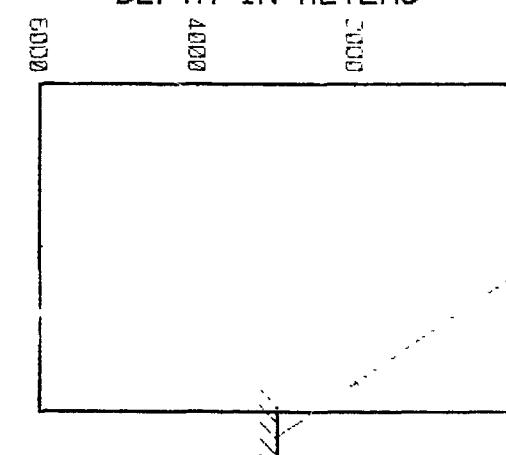
DB LOSS



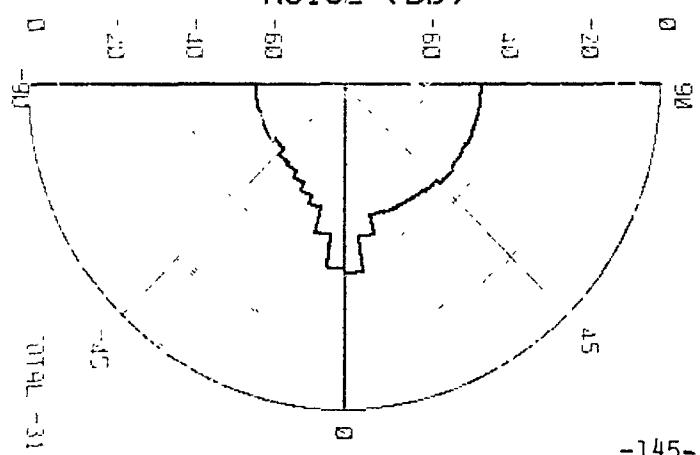
ARRIVAL ANGLE

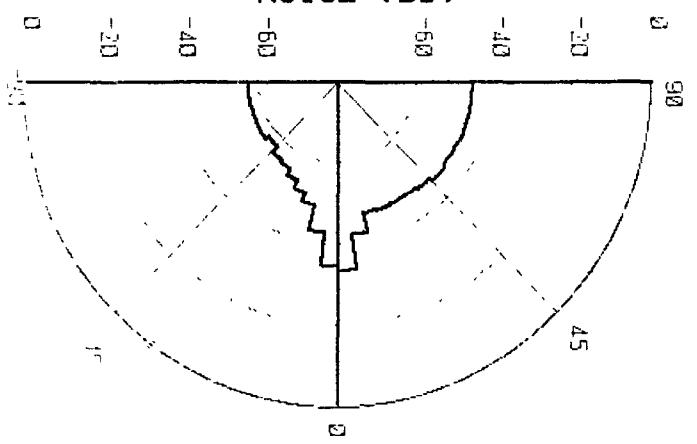
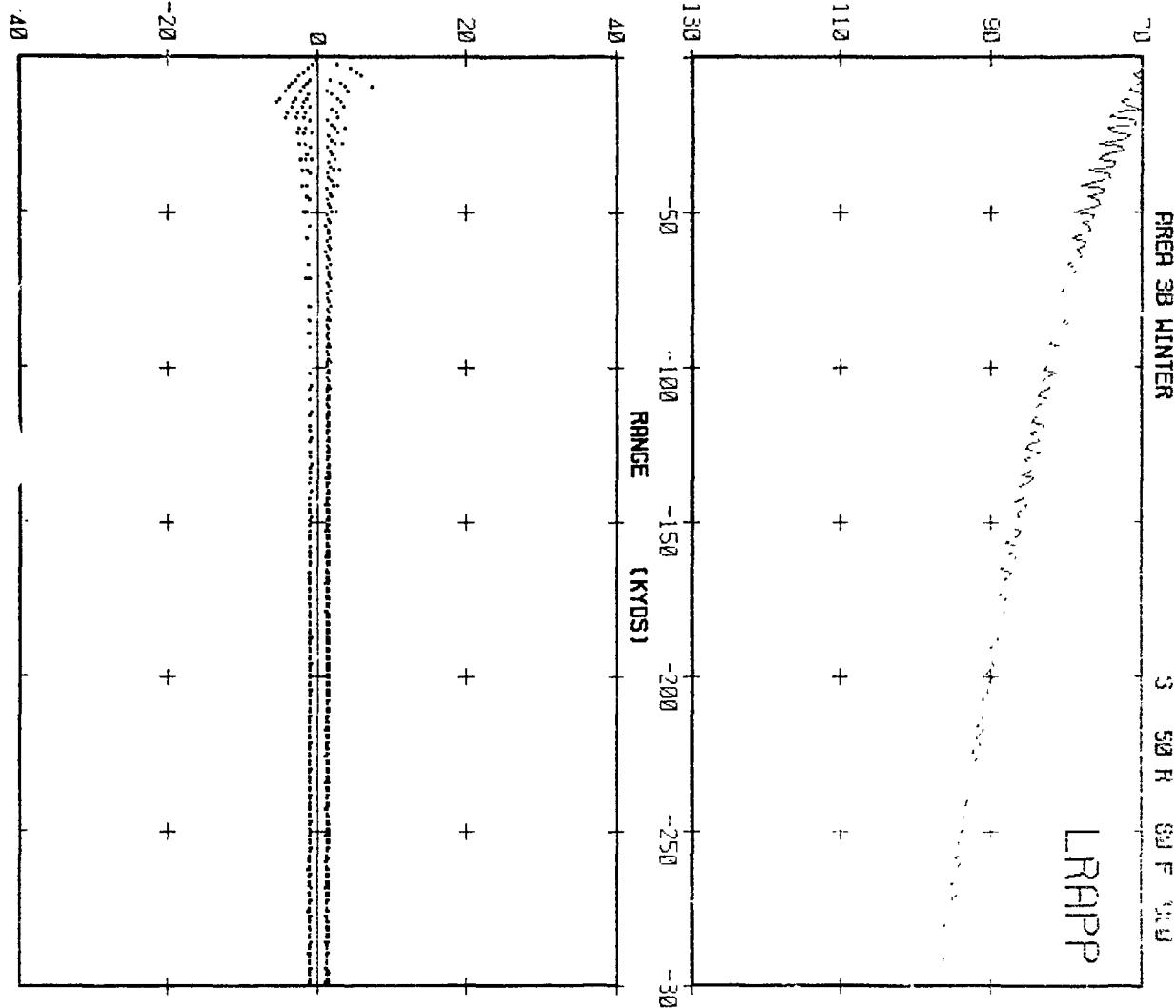


DEPTH IN METERS

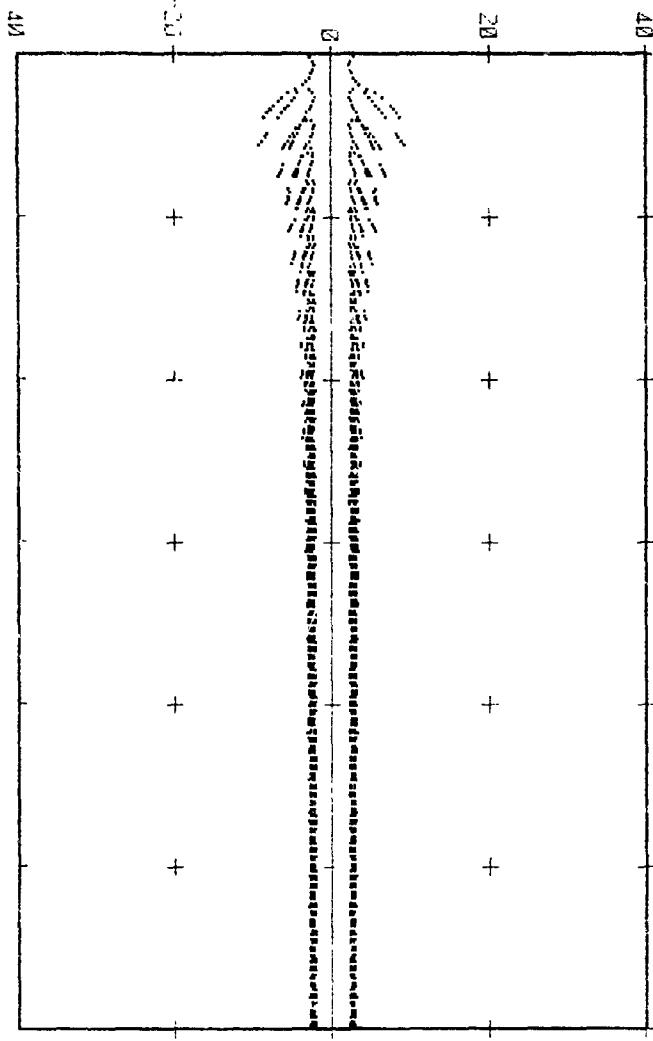


NOISE (DB)

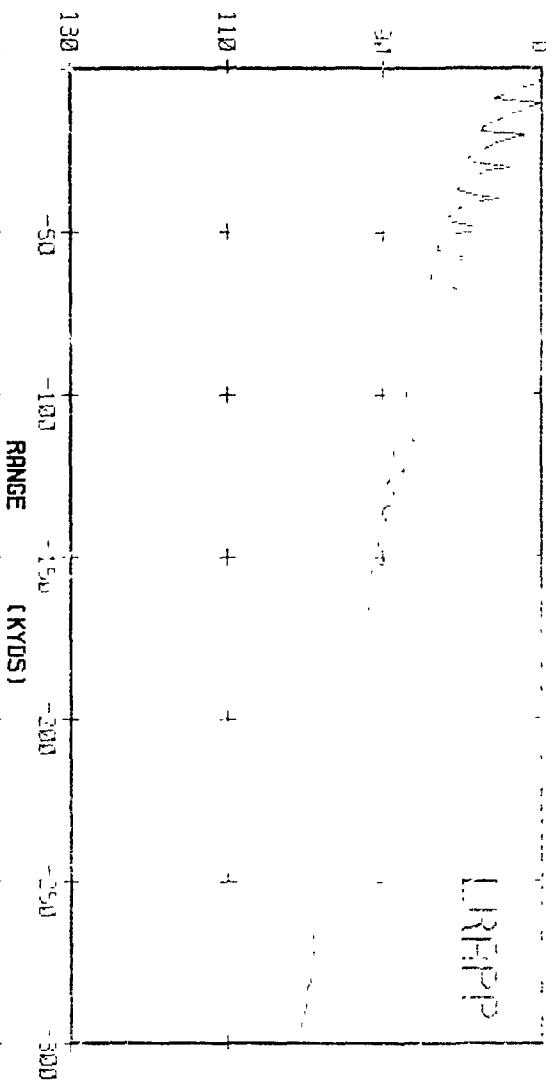




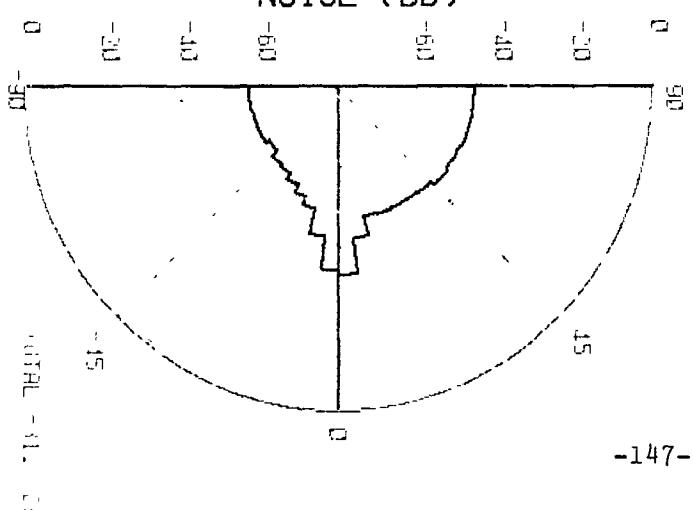
ARRIVAL ANGLE



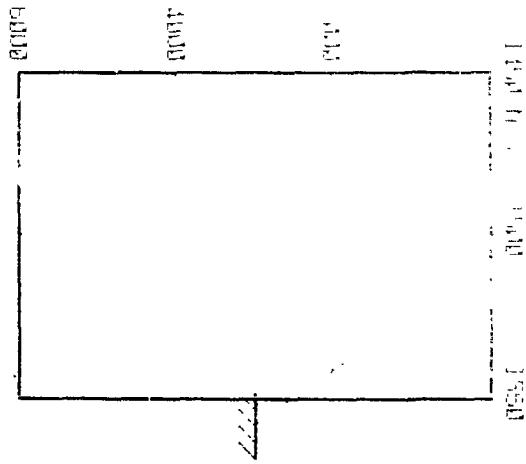
DB LOSS



NOISE (DB)



DEPTH IN METERS



ARRER 3B WINTER

S 20 R 100 F 900

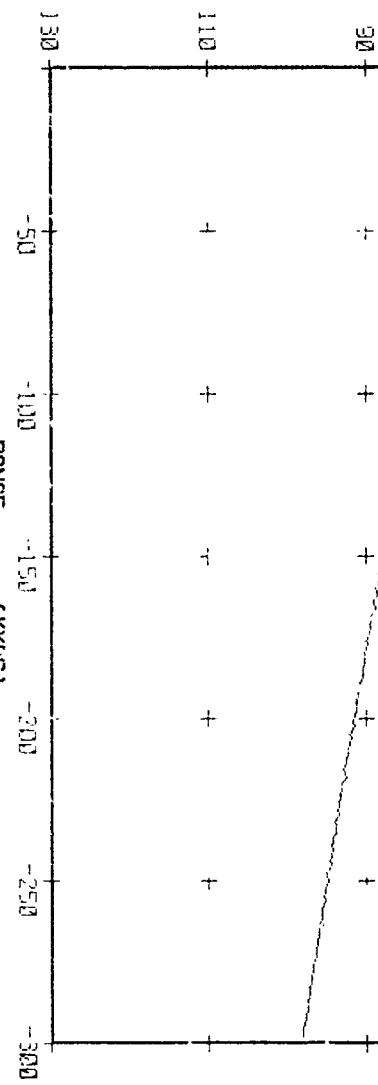
1450 M/S

1500

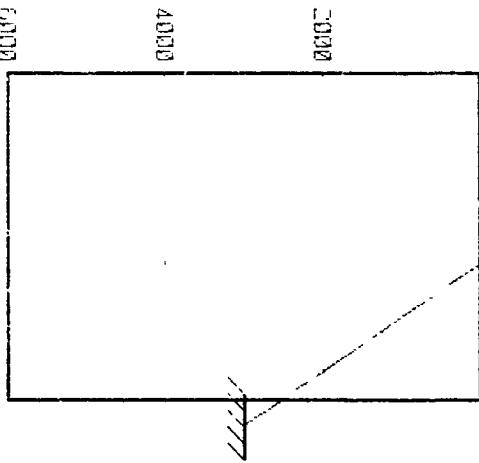
1550

LRRAPP

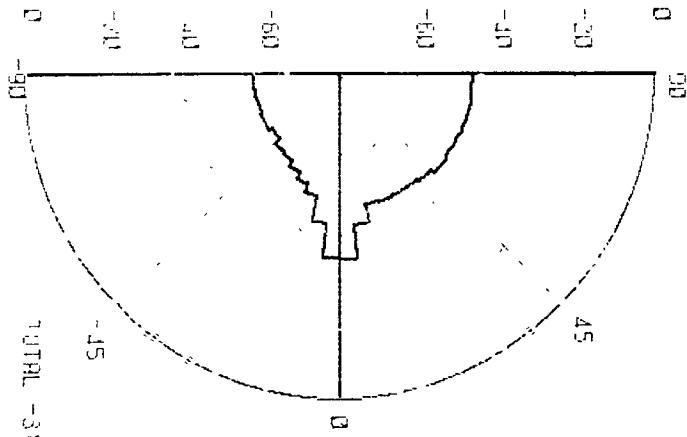
DB LOSS



DEPTH IN METERS



NOISE (DB)



70

AREA 3B WINTER

S 50 R 100 F 900

1450 M.S. 1500 1550

LRAPP

DB LOSS

90+

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100+

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DB LOSS

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+

DEPTH IN METERS

2000

4000

6000

8000

10000

12000

14000

16000

18000

20000

22000

NOISE (DB)

100

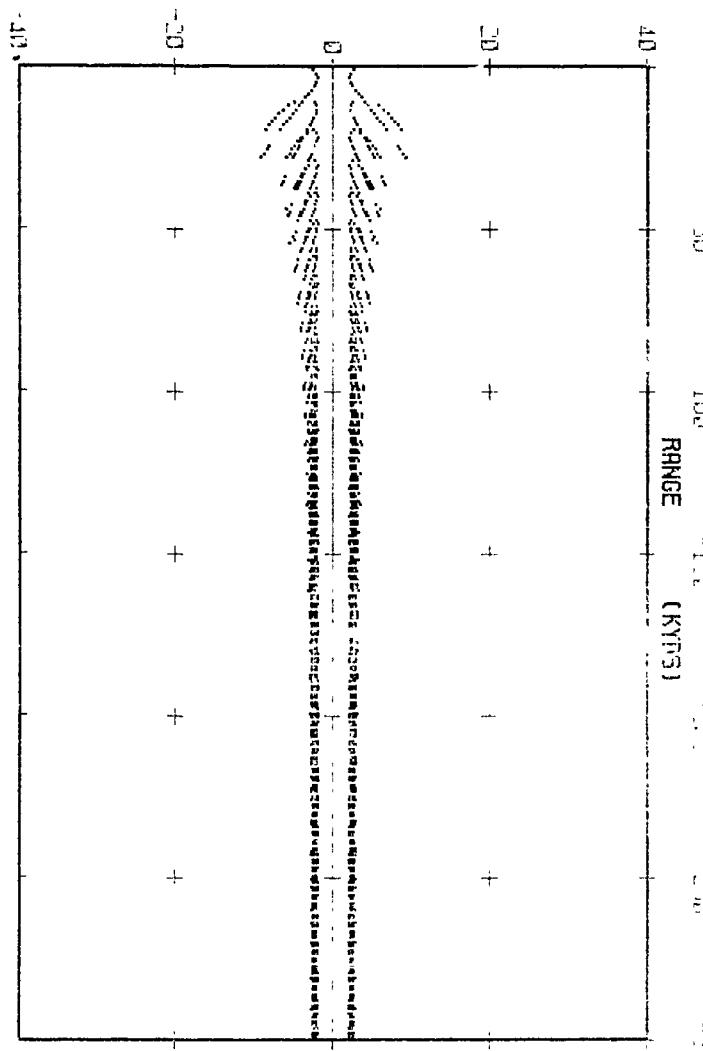
120

140

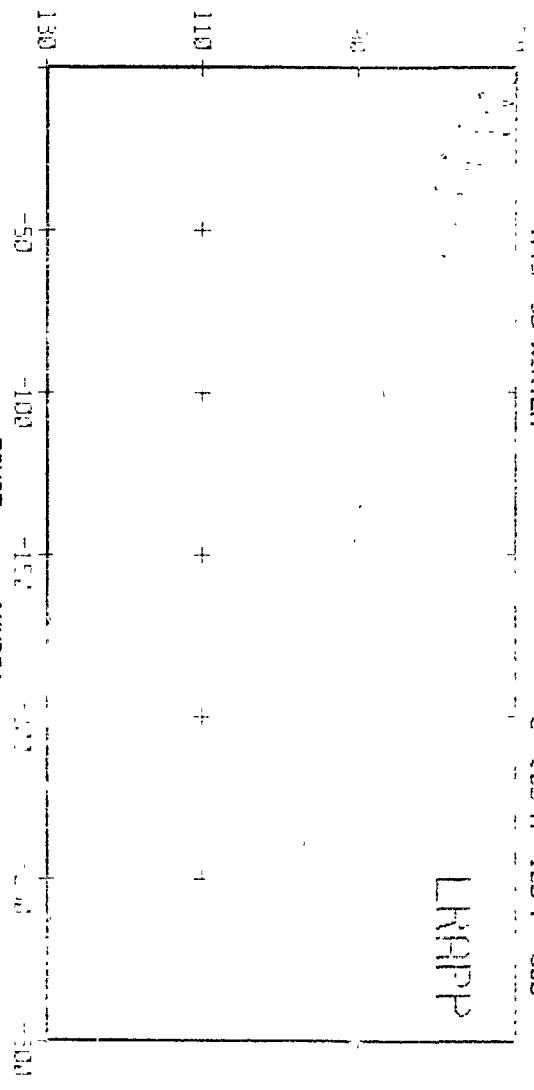
160

-149-

ARRIVAL ANGLE

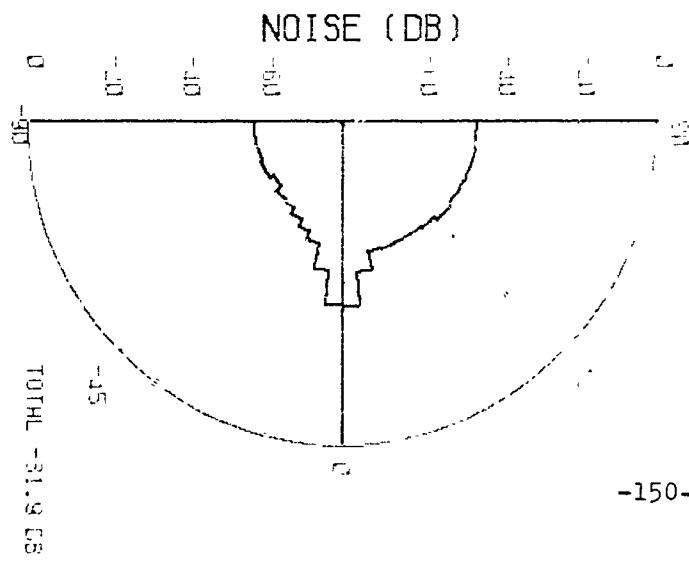


DB LOSS

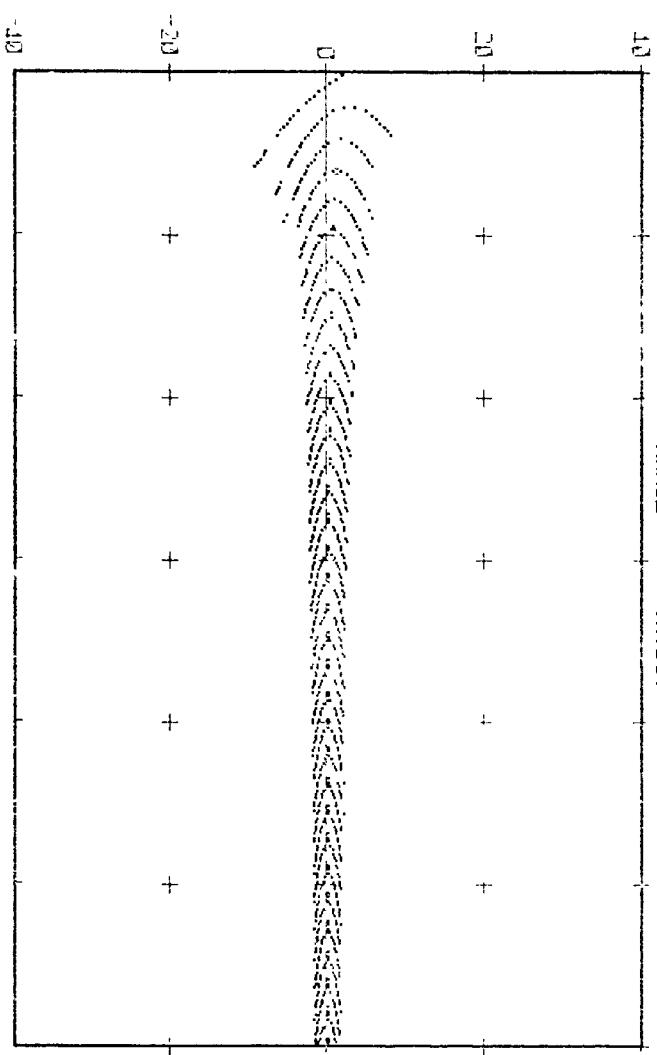


LKHPP

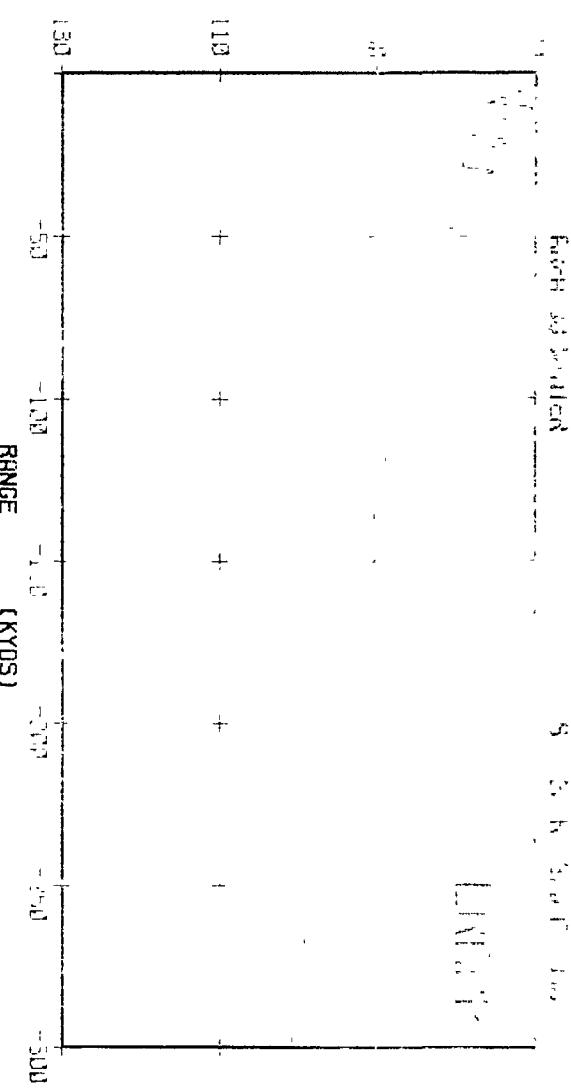
DEPTH IN FMS



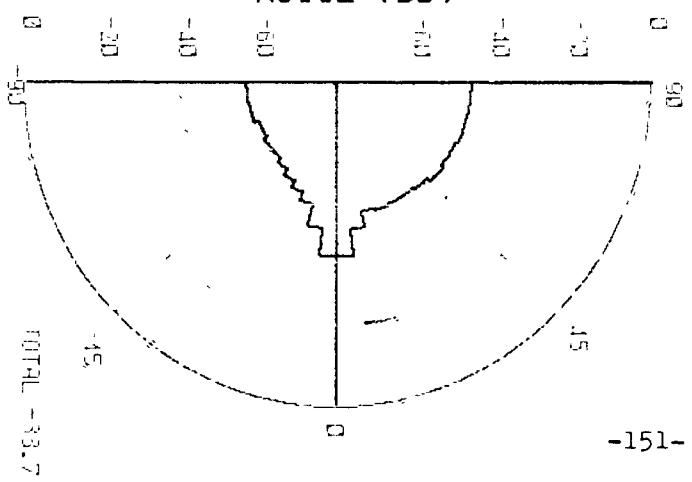
ARRIVAL ANGLE



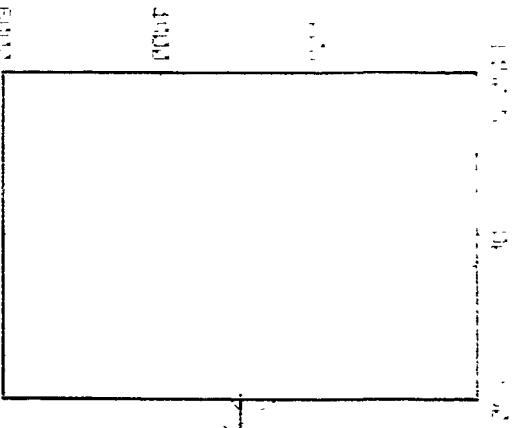
DB LOSS



NOISE (DB)



DEPTH IN METERS



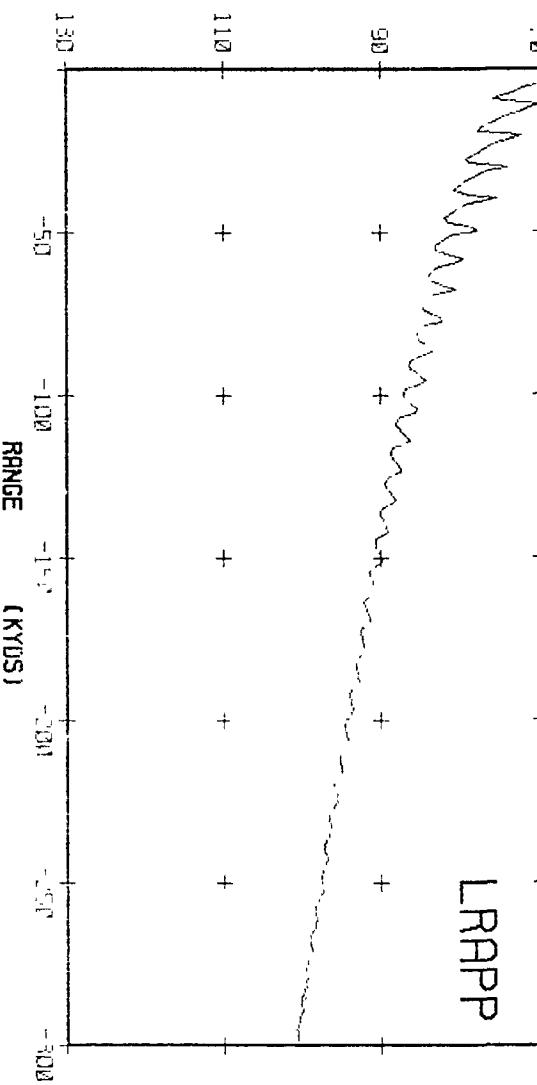
AREA 3B WINTER

S 50 R 300 F 900

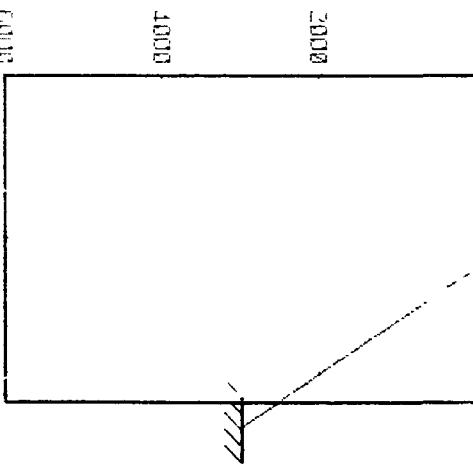
1450 N.S 1520 1550

LRAPP

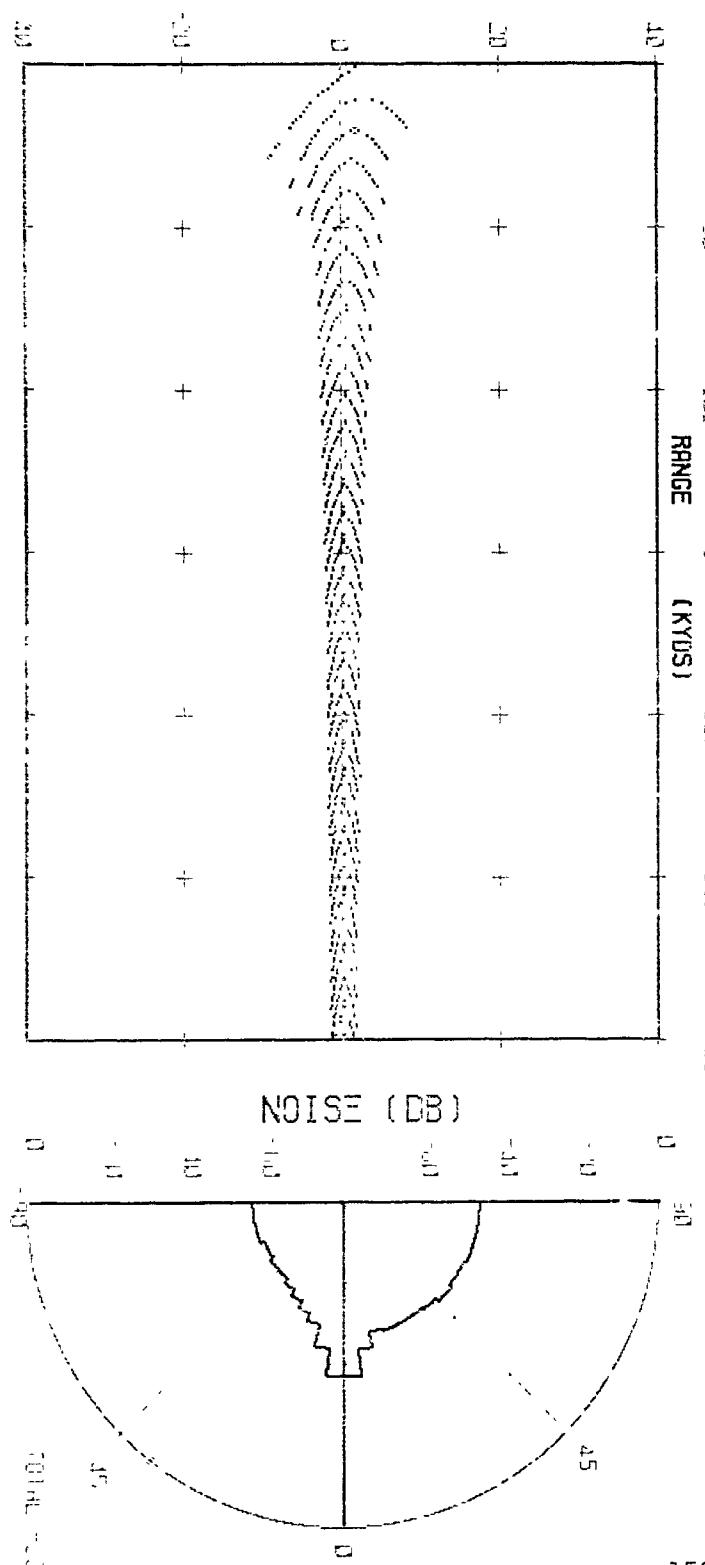
DB LOSS



DEPTH IN METERS



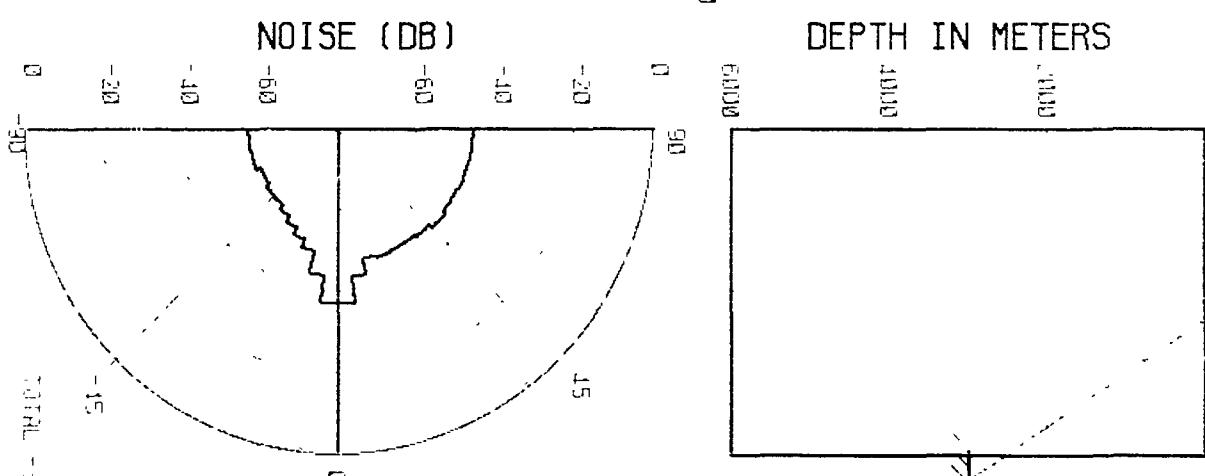
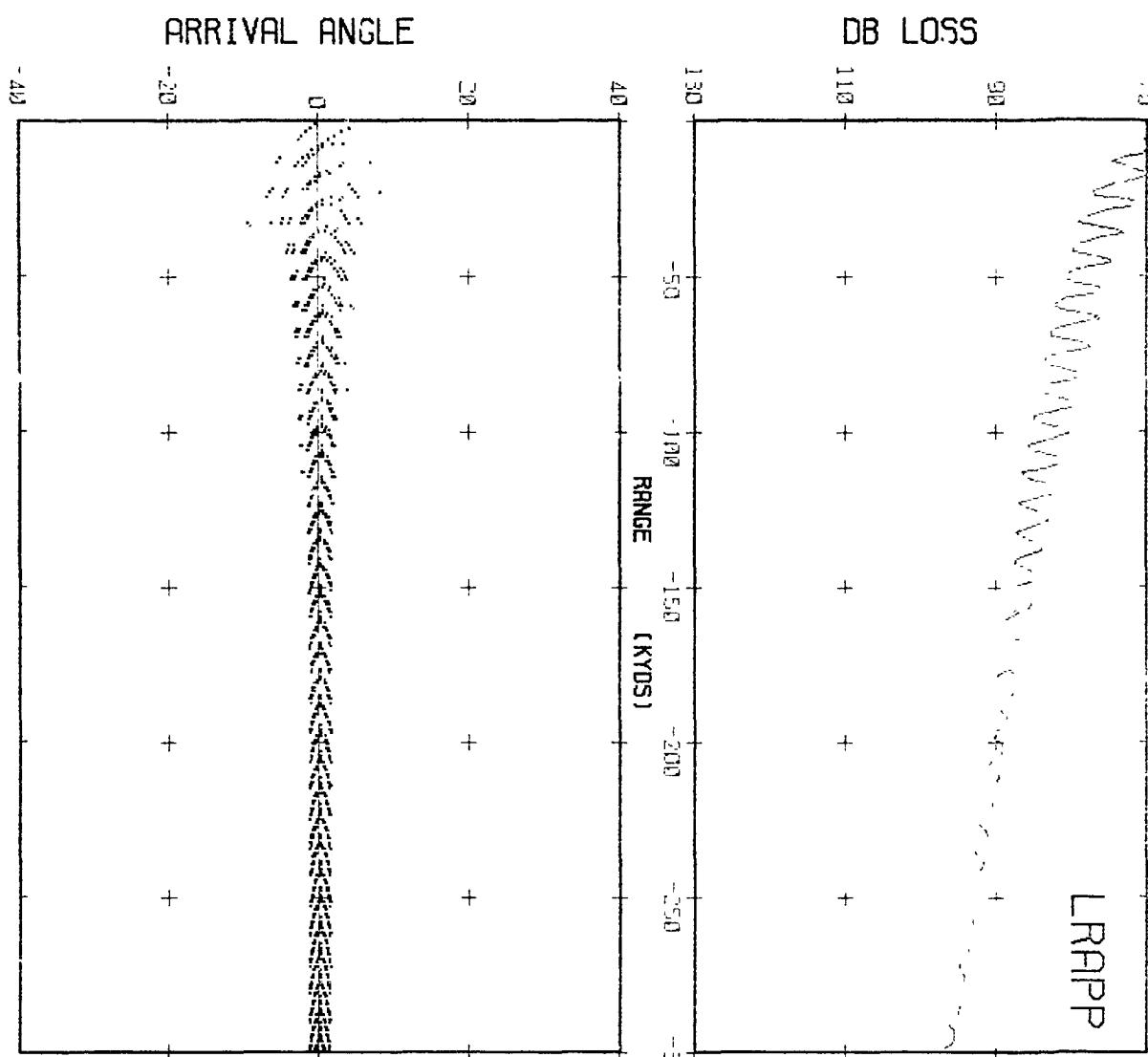
NOISE (DB)



AFER 3B WINTER

S 300 R 300 F 930

1450 11 3 1550 1550



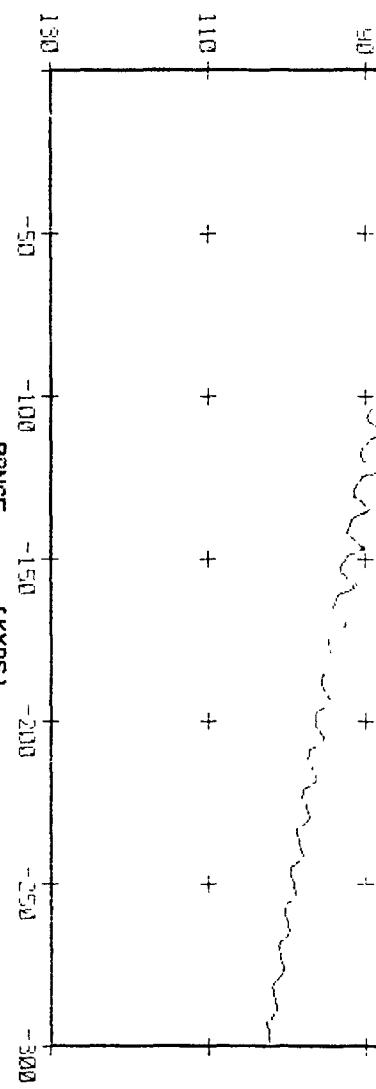
AREA 3B WINTER

S 20 R 500 F 900

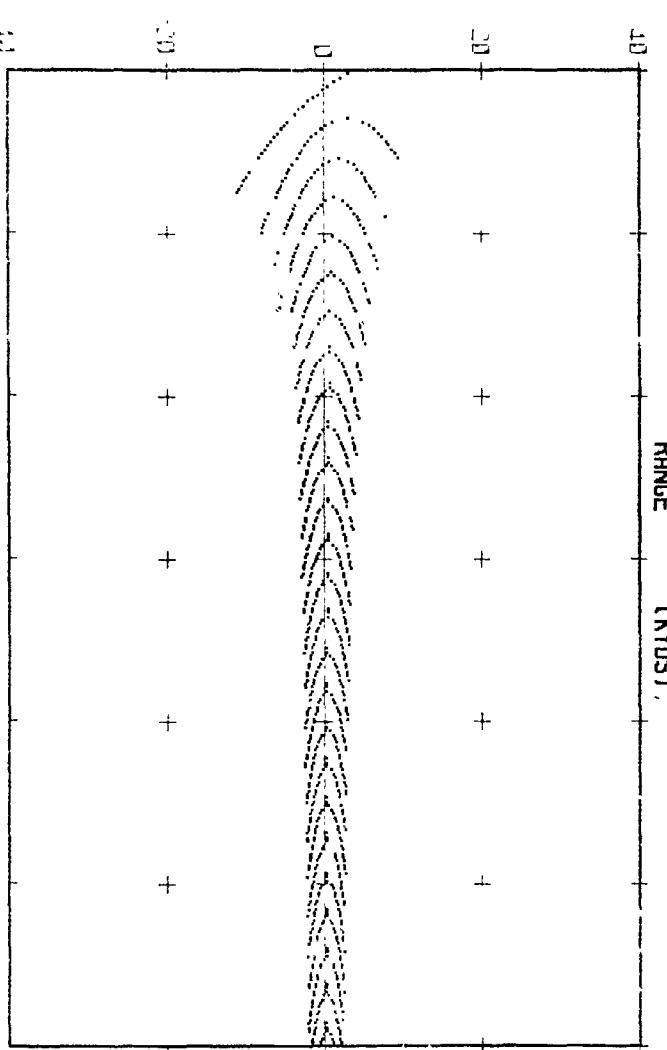
1450 1455 1500 1550

LRAPP

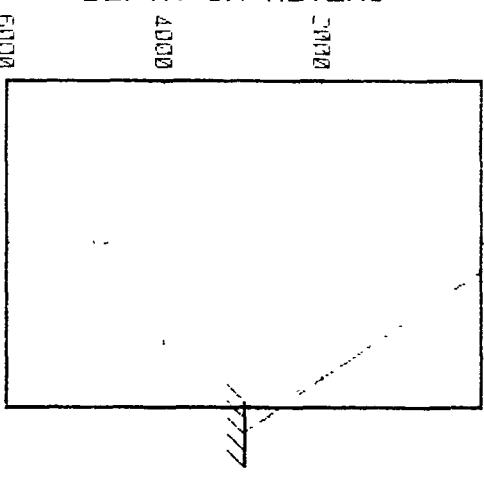
DB LOSS



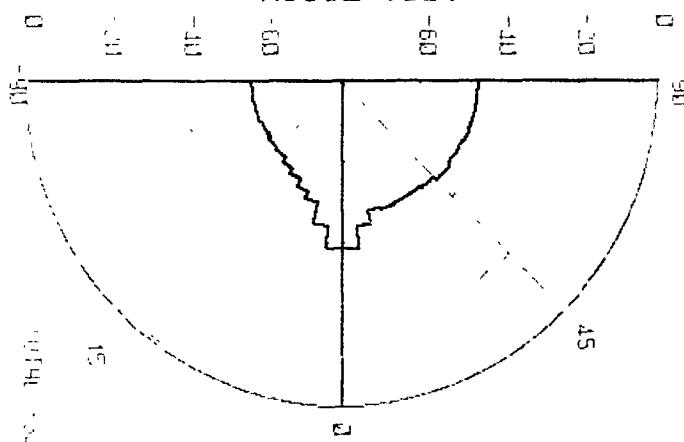
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



72

AREA 3B WINTER

S 50 R 50 F 900

1450 11/5 1500 1550

LRAPP

DB LOSS

110

+

+

+

+

+

+

DEPTH IN METERS

2000

4000

6000

8000

10000

12000

14000

16000

18000

20000

22000

24000

26000

28000

30000

32000

34000

36000

38000

40000

42000

44000

46000

48000

50000

52000

54000

56000

58000

60000

62000

64000

66000

68000

70000

72000

74000

76000

78000

80000

82000

84000

86000

88000

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620000

0

ARR 3B WINTER

S 300 R 500 F 500

1450 1500 1550

DB LOSS

90

+

+

+

+

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+

40

-50

-100

-150

-200

-250

-300

0

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5000

4000

3000

2000

1000

0

-

1000

2000

3000

4000

5000

LRAPP

ARRIVAL ANGLE

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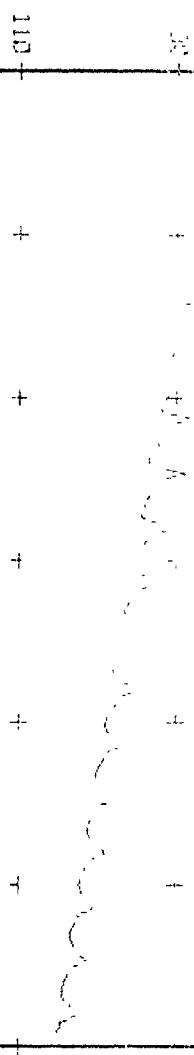
HREQ 38 WINTER

S 20 R 1523 F 982

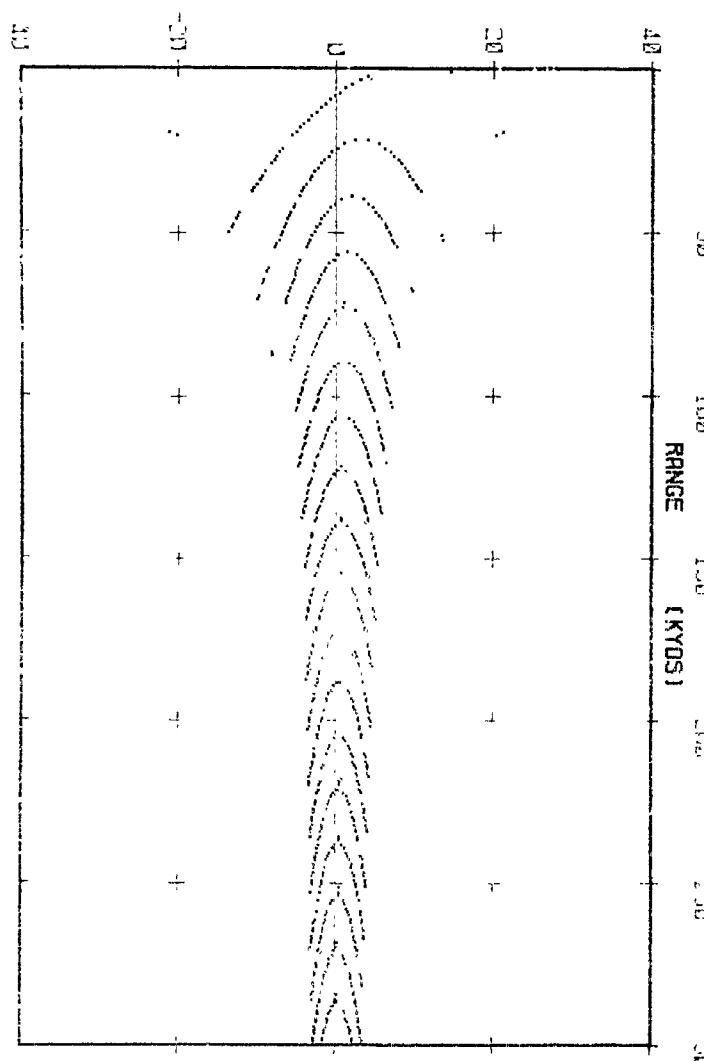
1550 1550 1550

LRAAPP

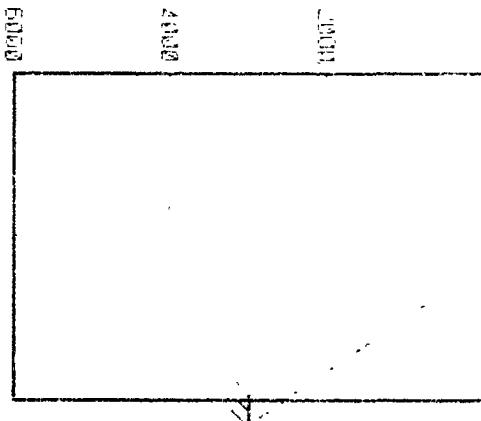
DB LOSS



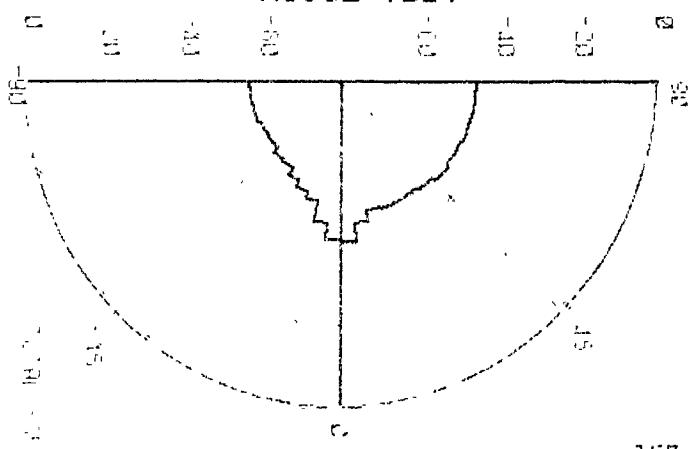
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (dB)

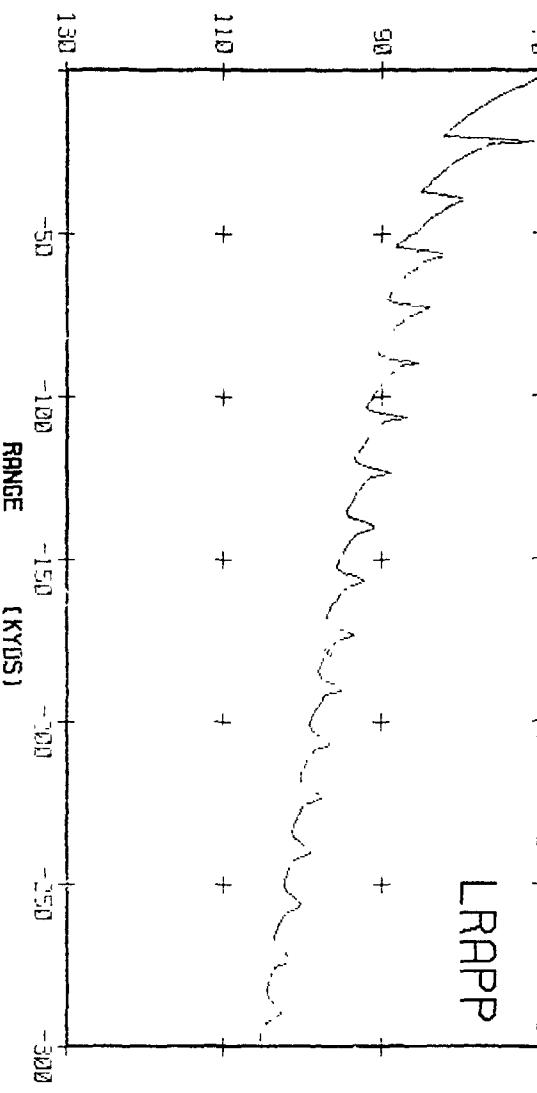


AREA 3B WINTER

S 50 R 1000 F 900

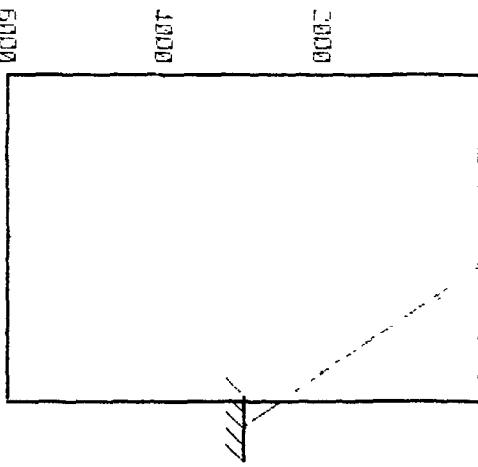
1450 M/S 1500 1550

DB LOSS

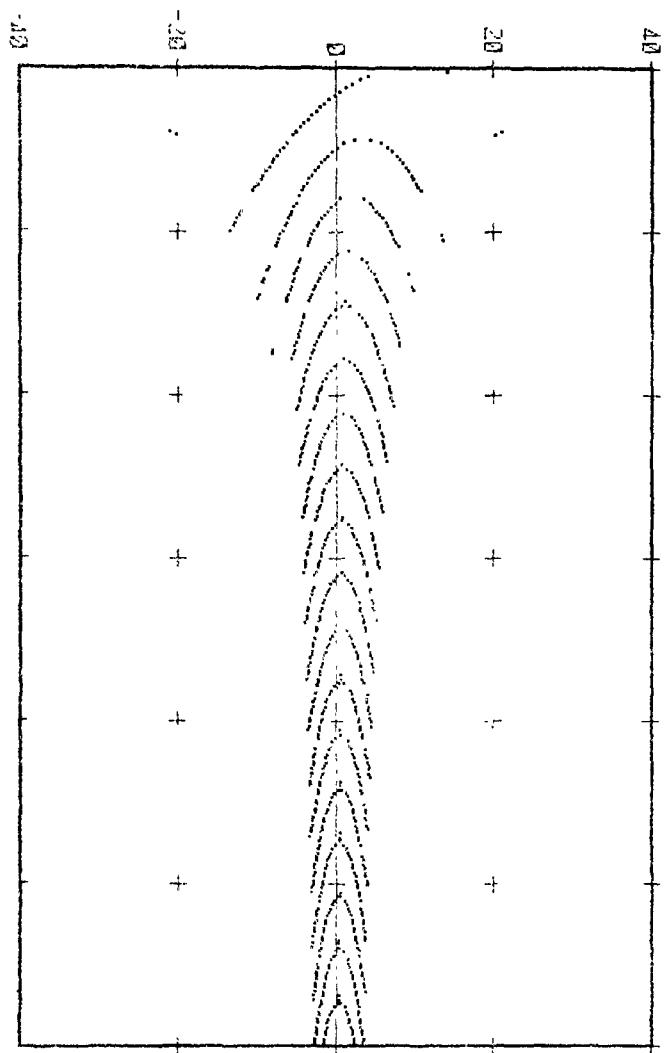


LRAAPP

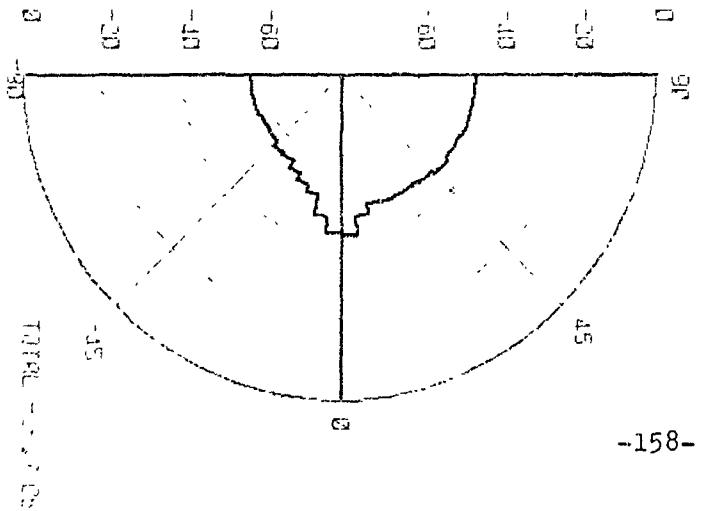
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

AREA 3B WINTER

S 300 R 1000 F 900

1450 145 1500 1550

LRAPP

DB LOSS

110

100

90

80

70

60

50

40

30

20

10

0

130

120

110

100

90

80

70

60

50

40

30

20

10

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20

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50

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70

80

90

100

110

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150

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840

850

860

870

880

890

900

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980

990

1000

1010

1020

1030

1040

1050

1060

1070

1080

1090

1100

1110

1120

1130

1140

1150

1160

1170

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1190

1200

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1390

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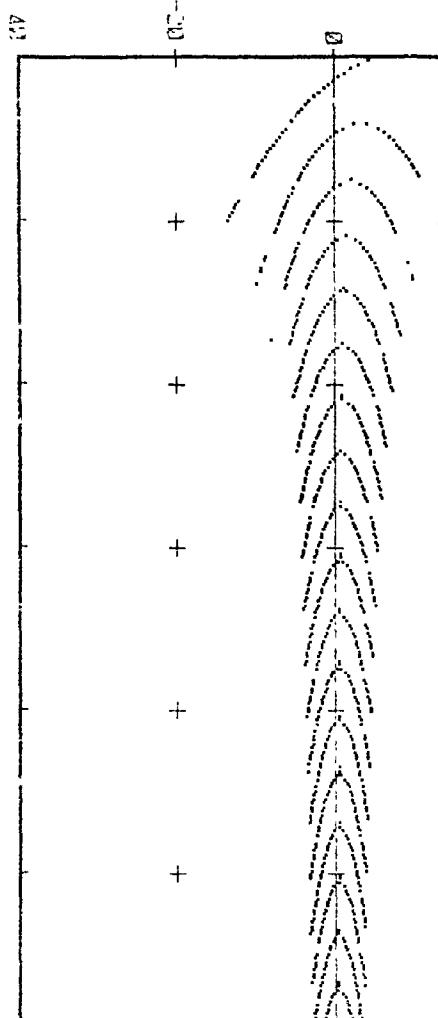
1520

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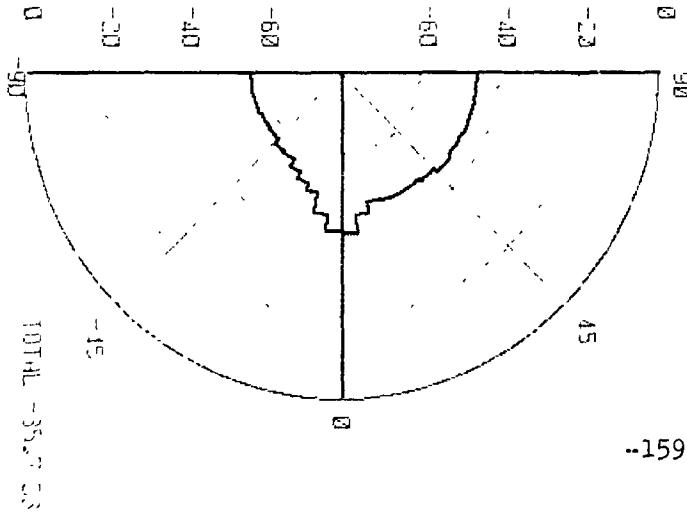
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ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS

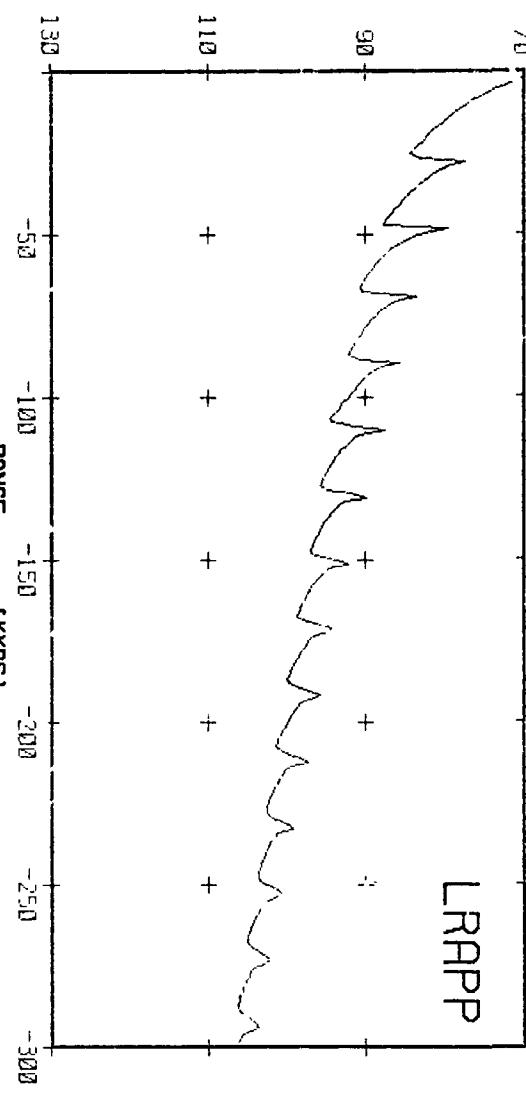
AREA 3B WINTER

S 20 R 1500 F 900

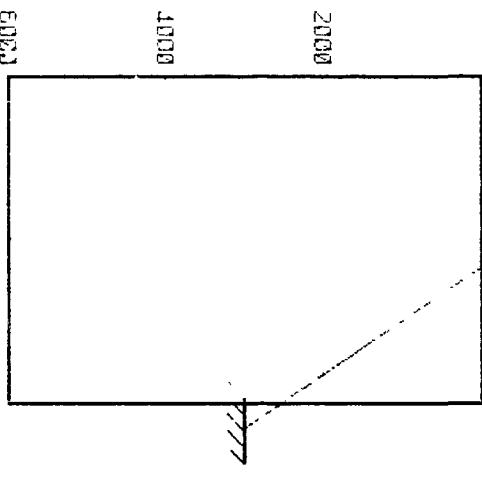
1450 N/S 1500 1550

LRAAPP

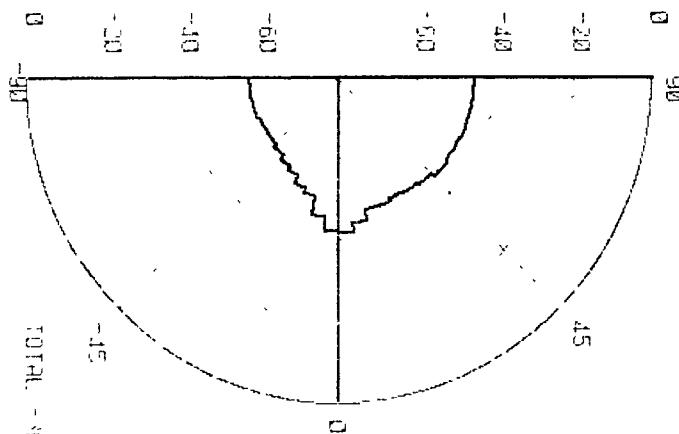
DB LOSS



DEPTH IN METERS



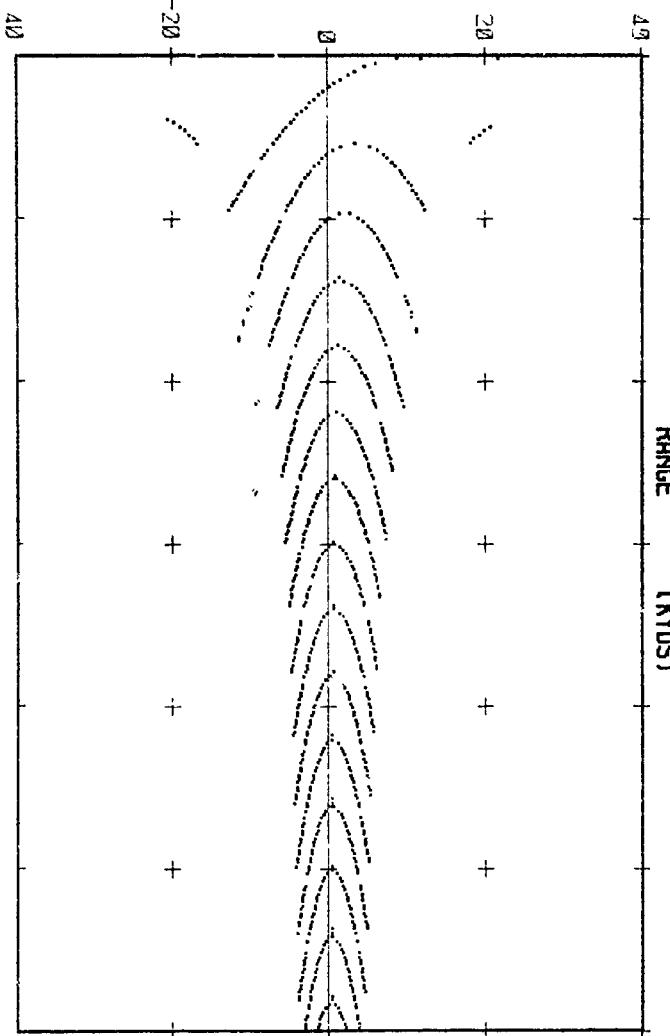
NOISE (DB)



-160-

TOTAL - 41.1 LBS

ARRIVAL ANGLE



70

AREA 3B WINTER

S 50 R 1500 F 900

1450 115 1500 1550

LRAPP

DB LOSS

110

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130

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ARRIVAL ANGLE

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NOISE (DB)

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AREA 3B WINTER

S 300 R 1500 F 900

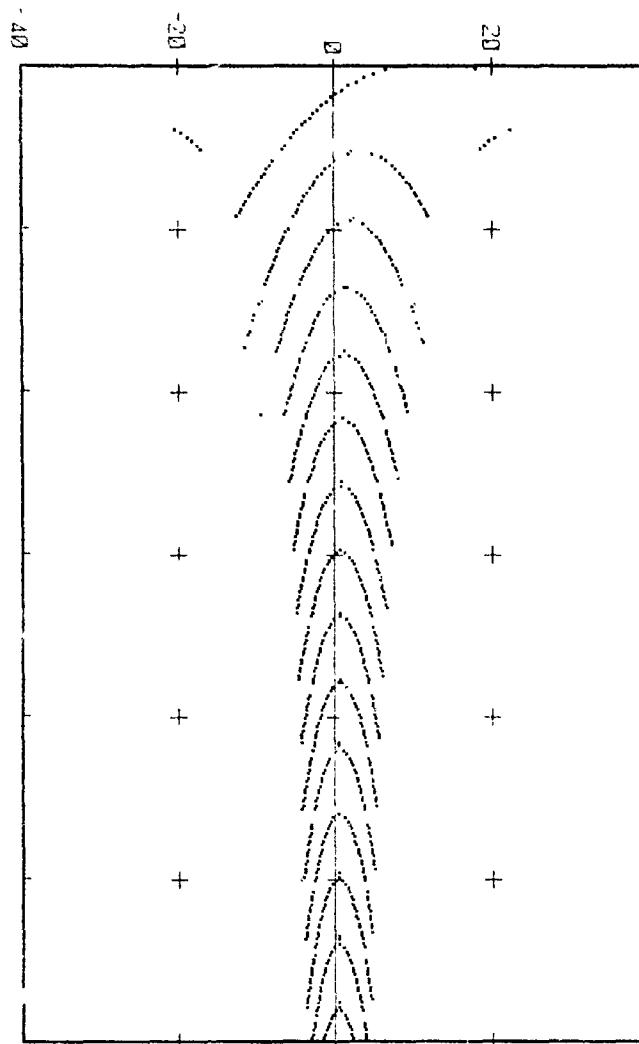
1450 165 1500 1550

LRAPP

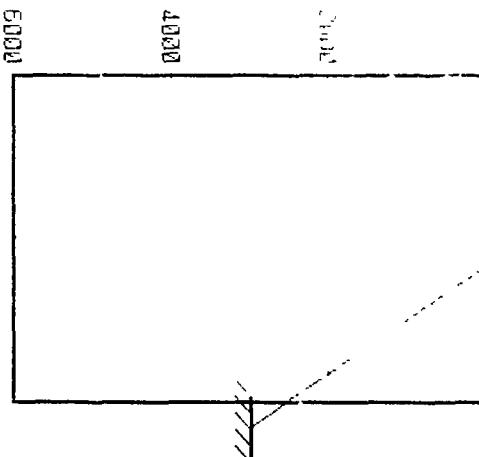
DB LOSS

110
90
+
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+
+130
110
90
70
50
30
10RANGE
(KILOMETERS)

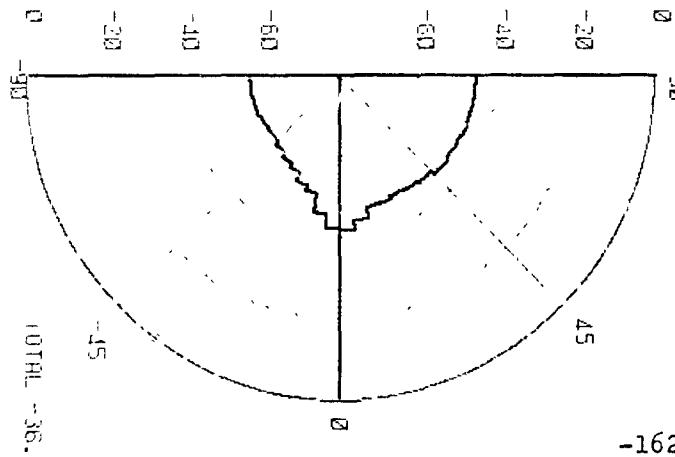
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

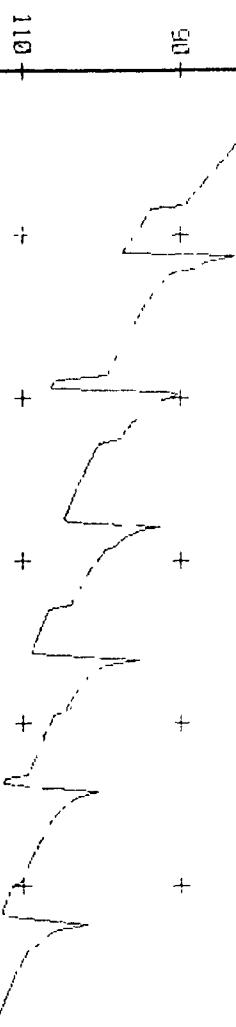
FREQ 38 WINTER

S 20 R 6000 F 900

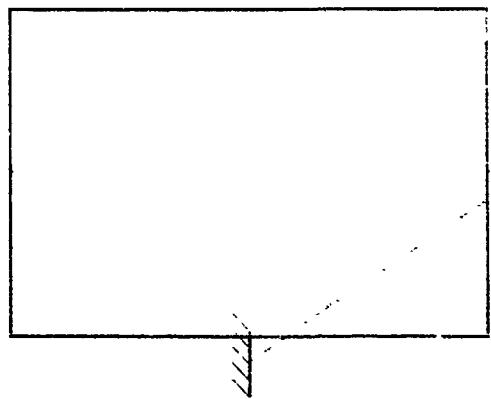
1450 1500 1500 1550

LRAPP

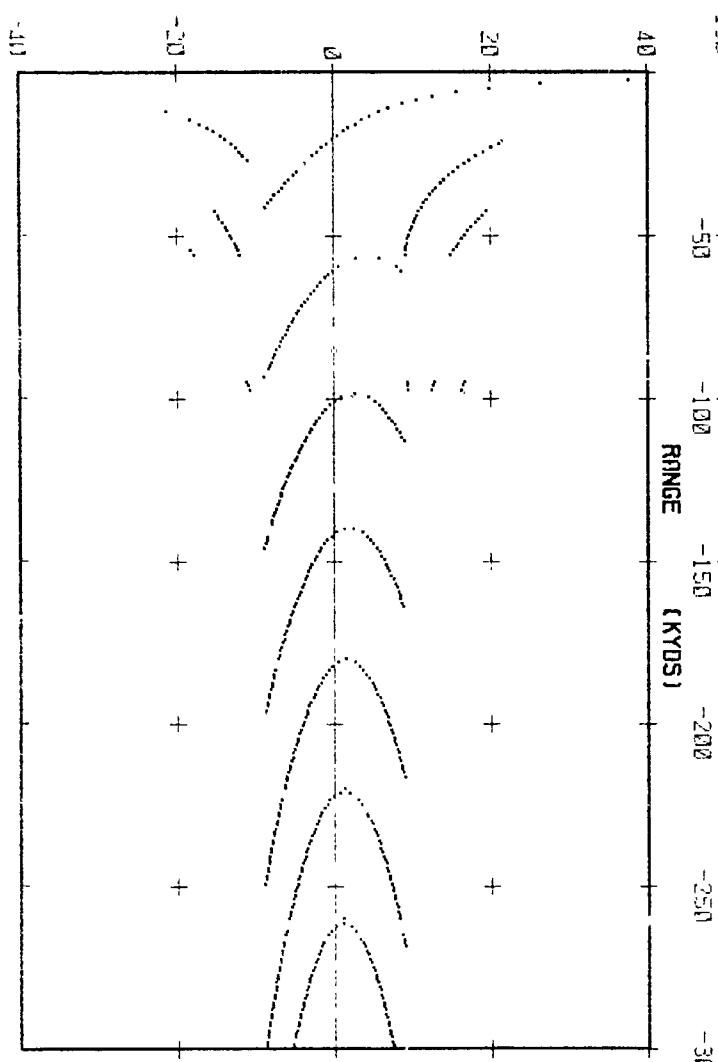
DB LOSS



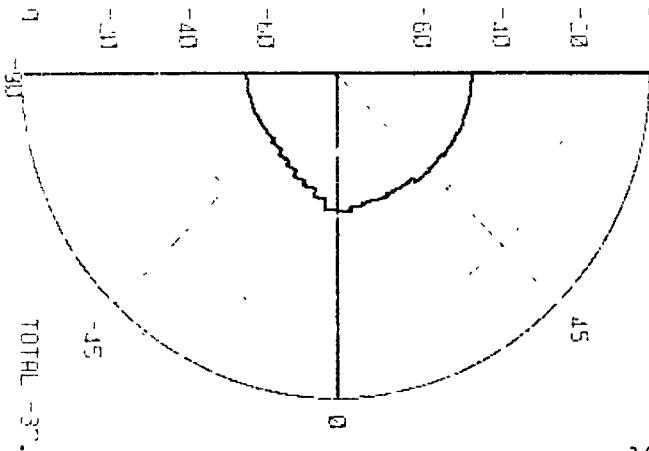
DEPTH IN METERS



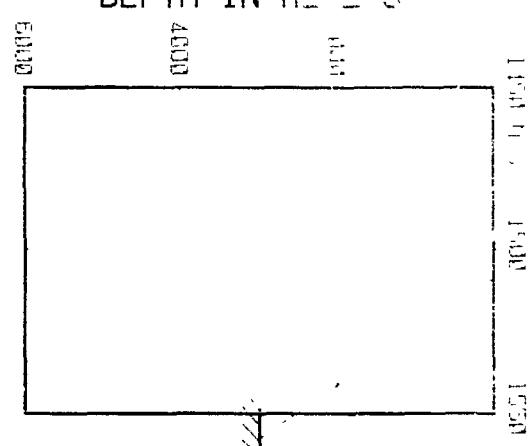
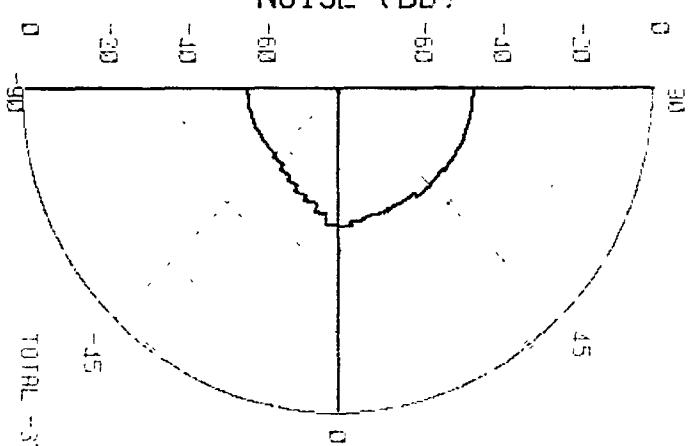
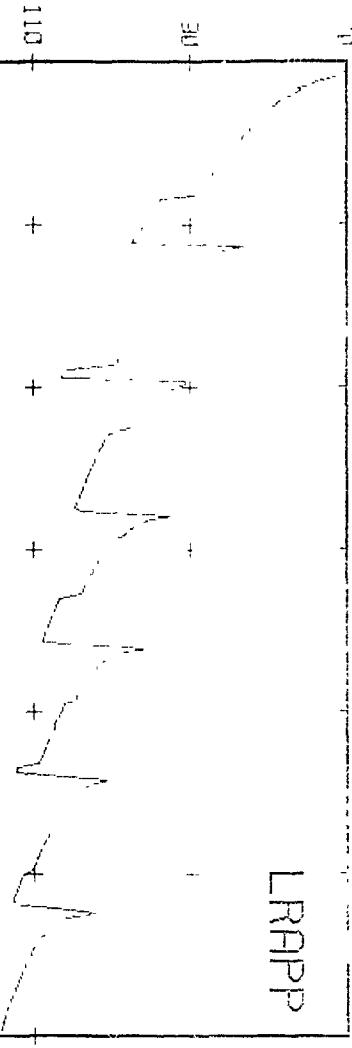
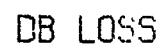
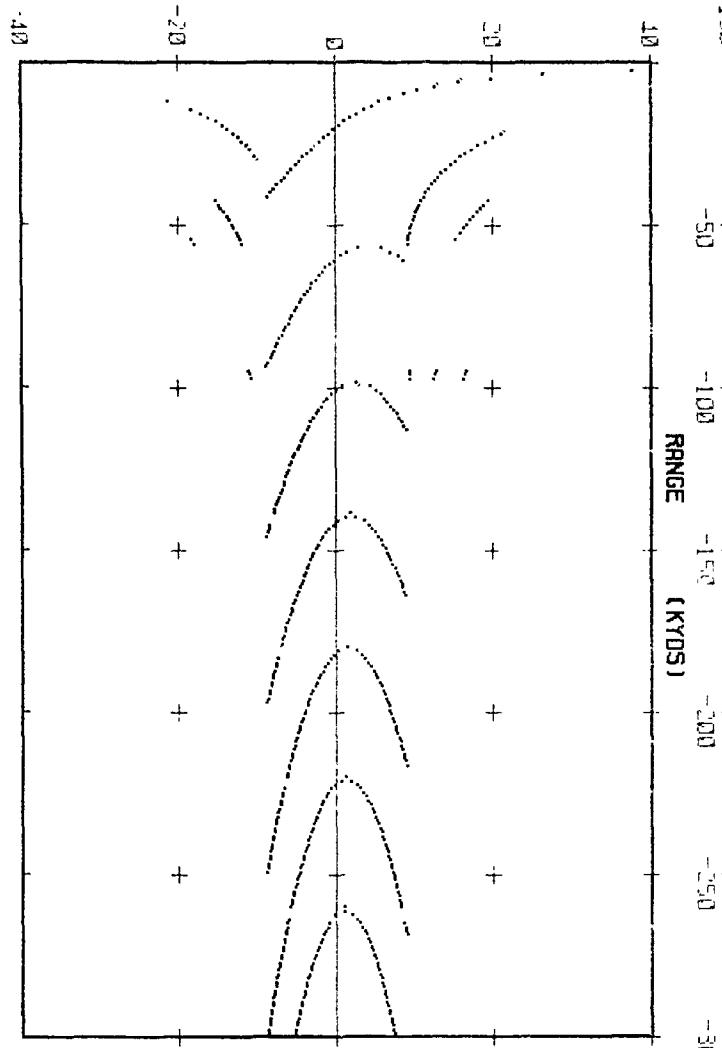
ARRIVAL ANGLE



NOISE (DB)



TOTAL - 37.5 dB



TOTAL - 5.5%

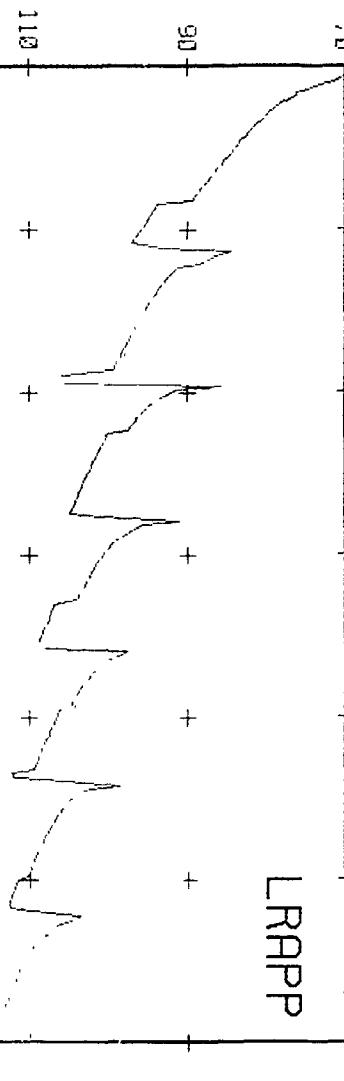
AREA 3B WINTER

S 3000 R 6000 F 900

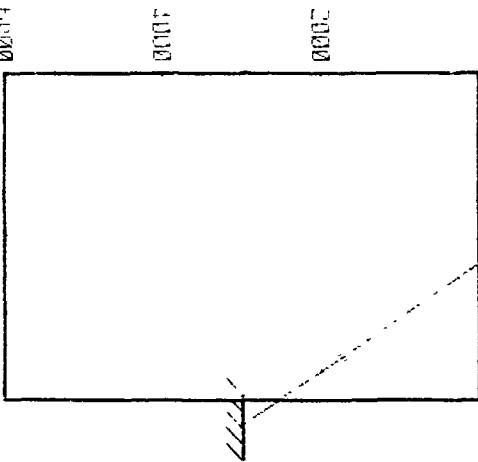
1450 14.5 1500 15.5

L RAPP

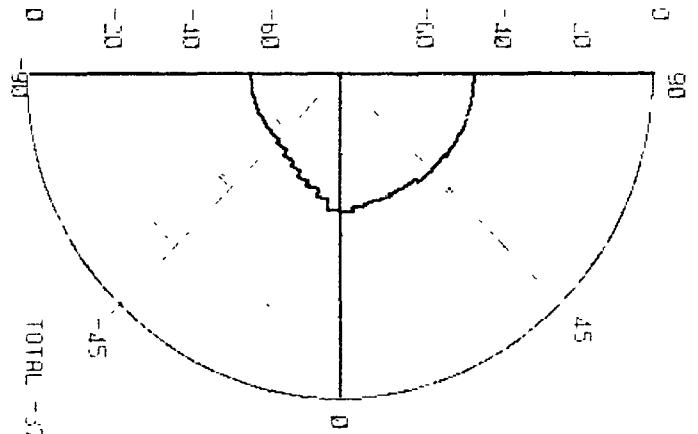
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -37.6 dB

AREA 3B WINTER

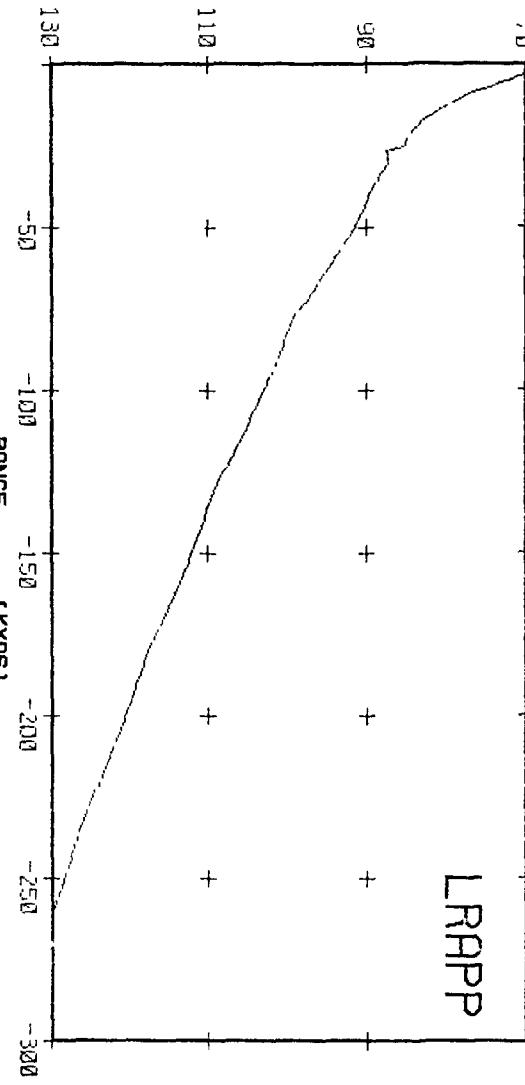
S 28 R 9842 F 900

1450 M/S 1500 1550

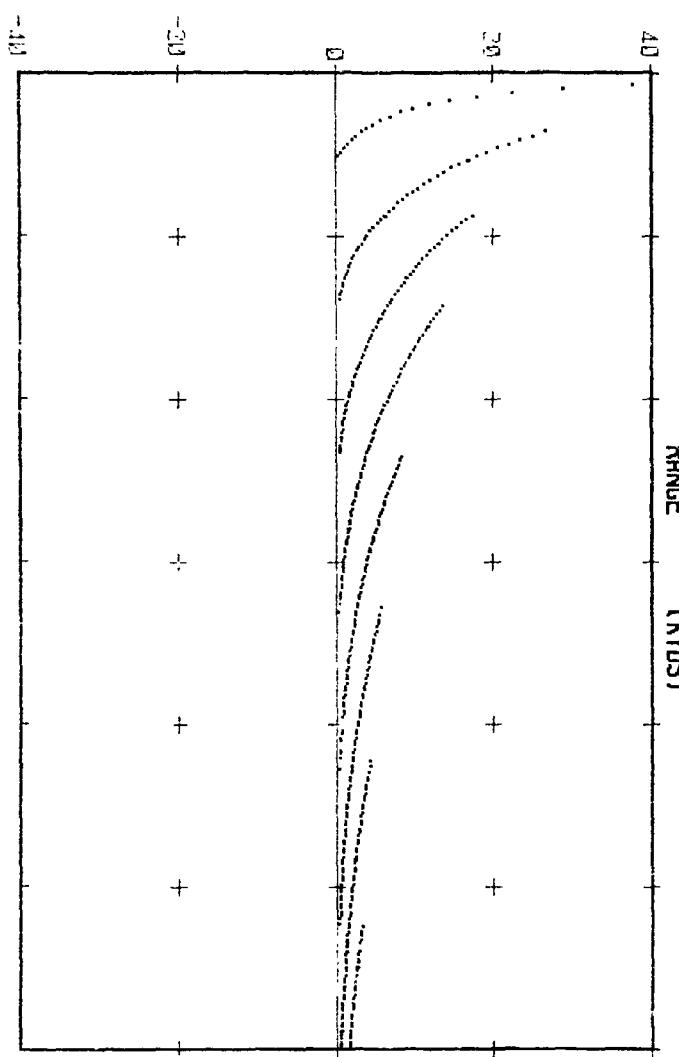
70

LRRPP

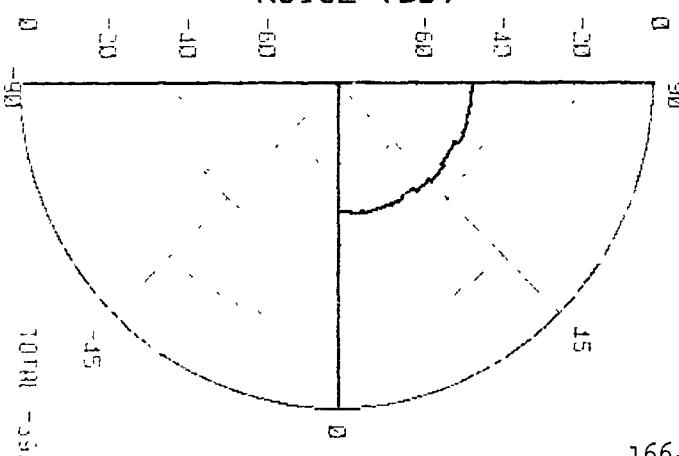
DB LOSS



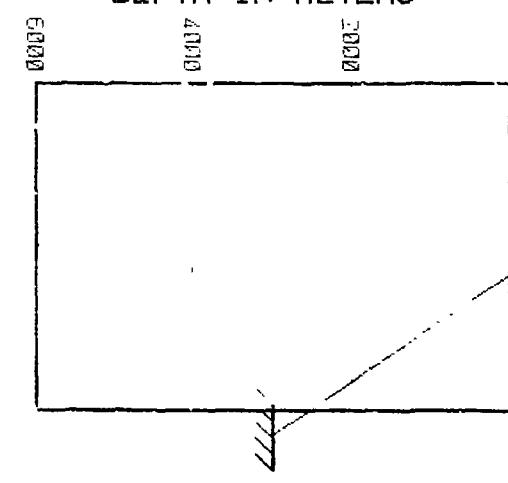
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



70

AREA 3B WINTER

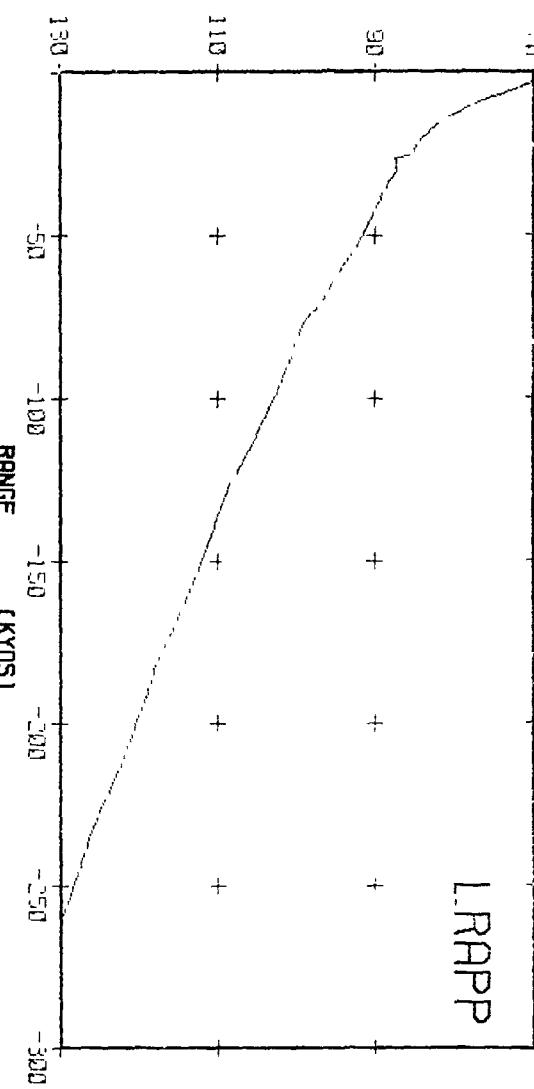
S 50 R 9242 F 900

1450 14.5 1500

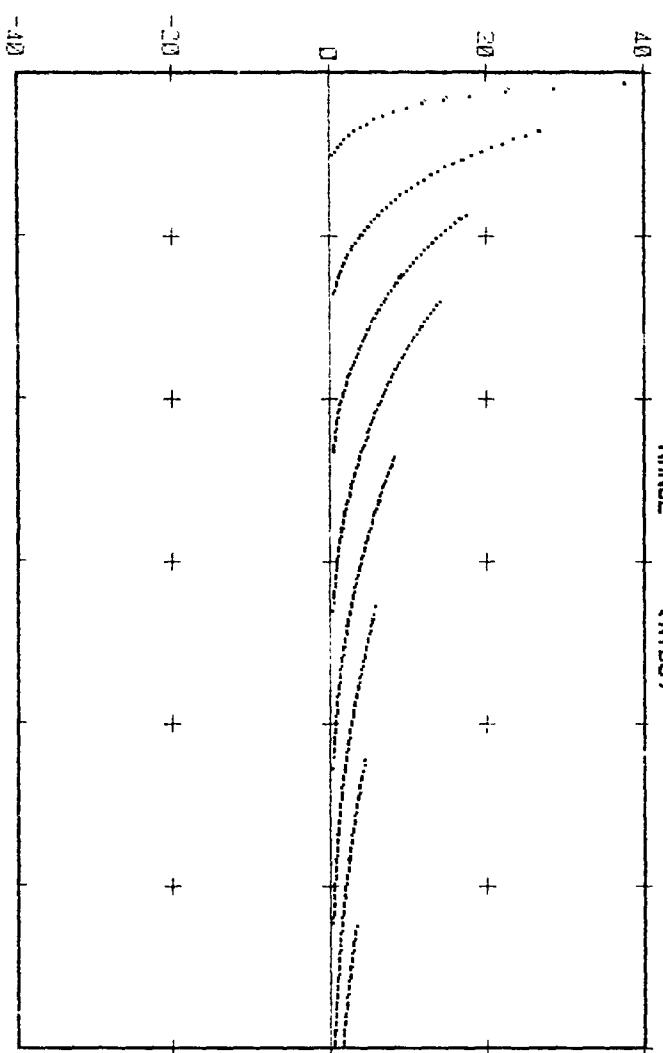
1550

L.RAPP

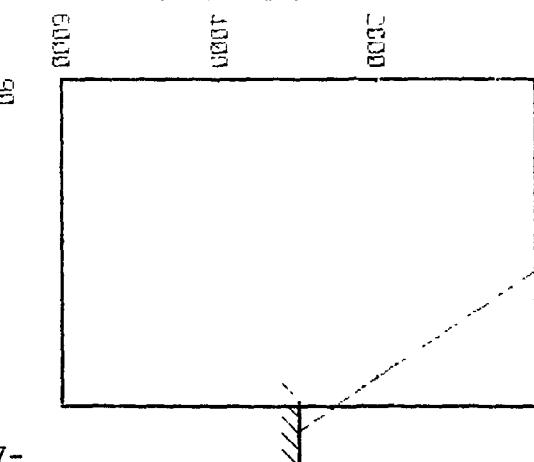
DB LOSS



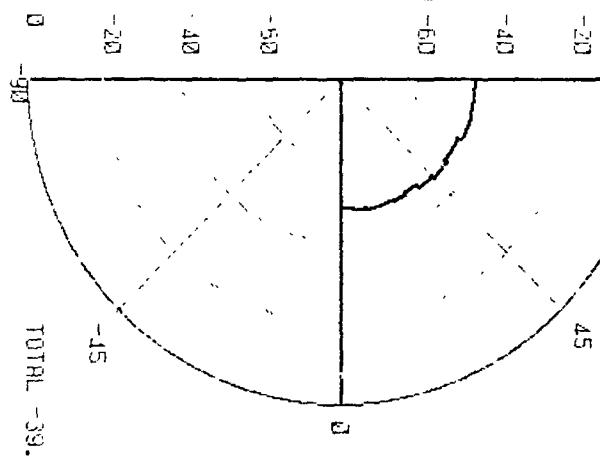
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL - 39.1 JS

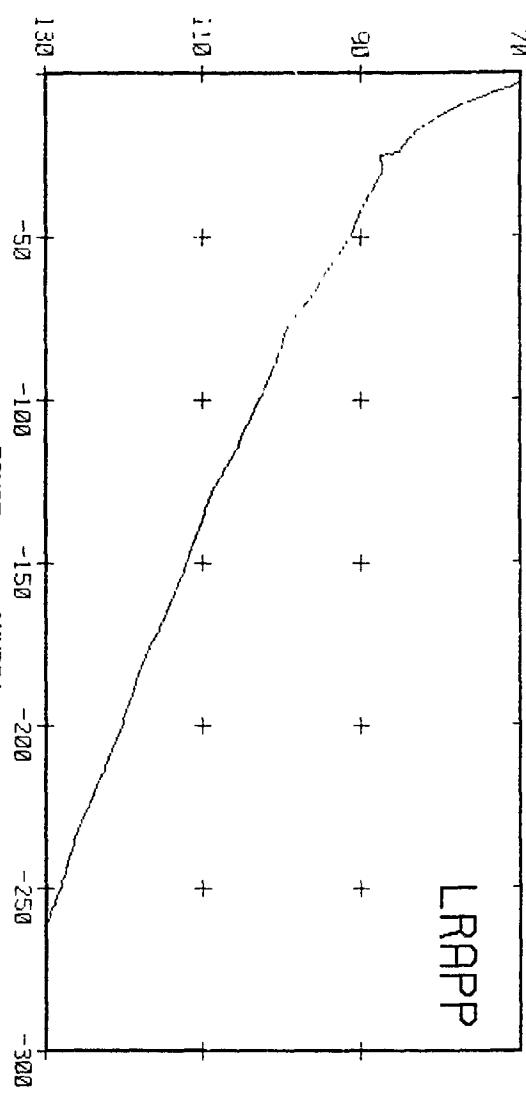
AREA 3B WINTER

S 30° R 9842 F 900

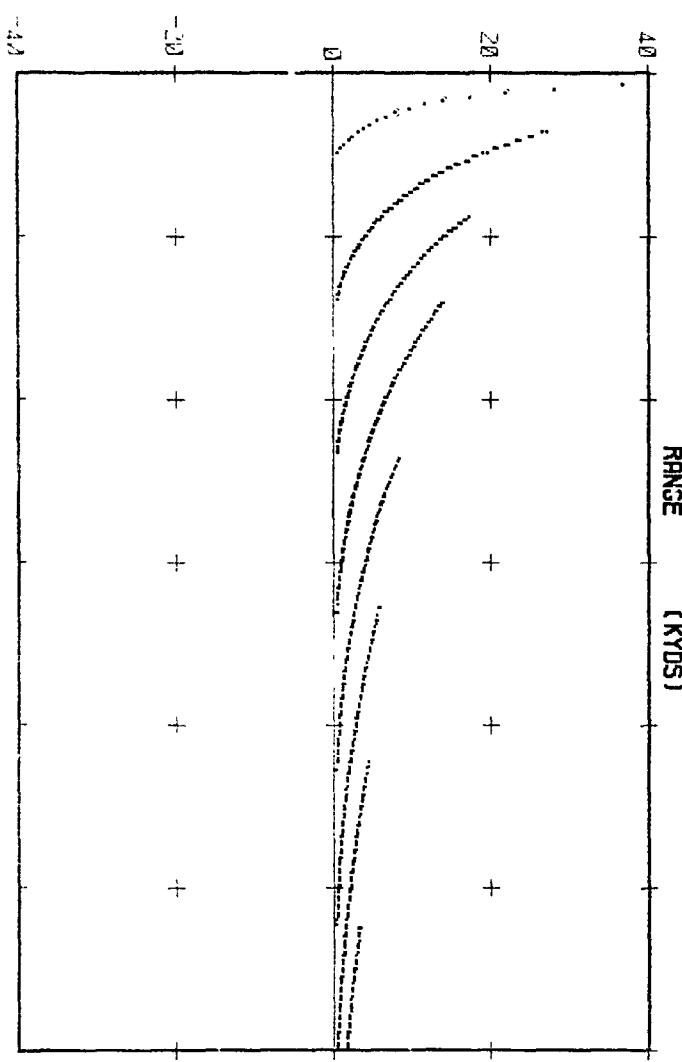
1450 11/2 1500 1550

LRAFP

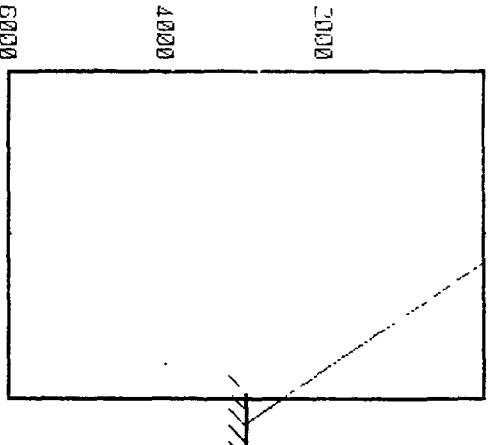
DB LOSS



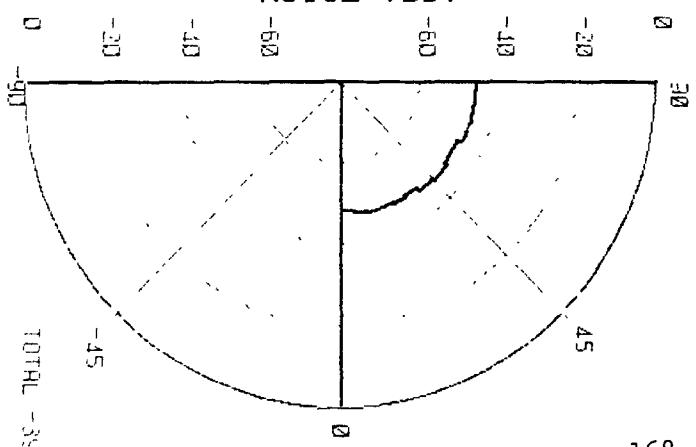
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



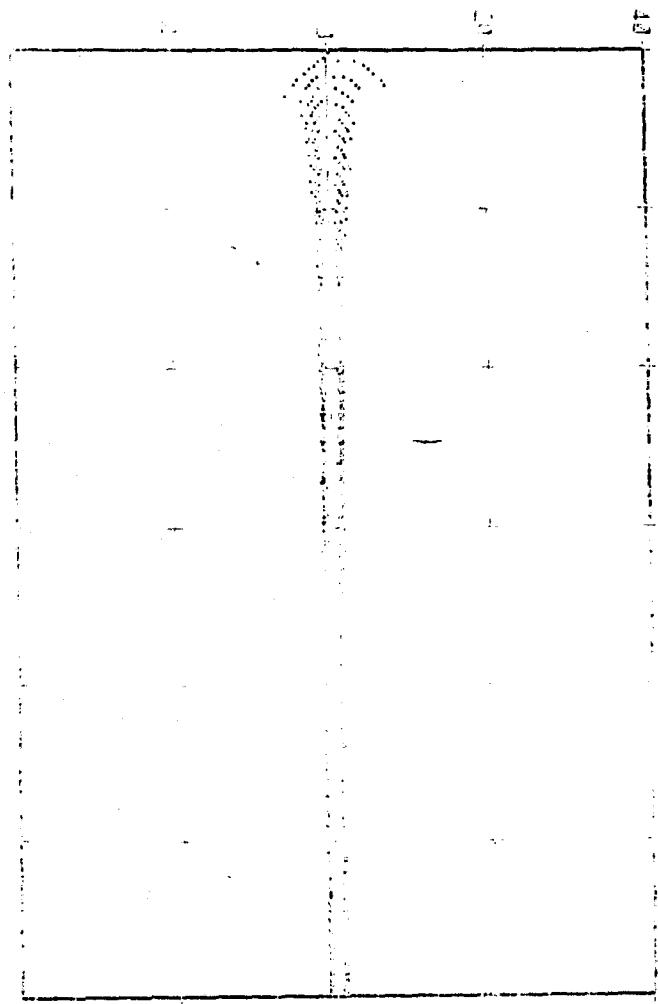
1

PRES 3B WINTER

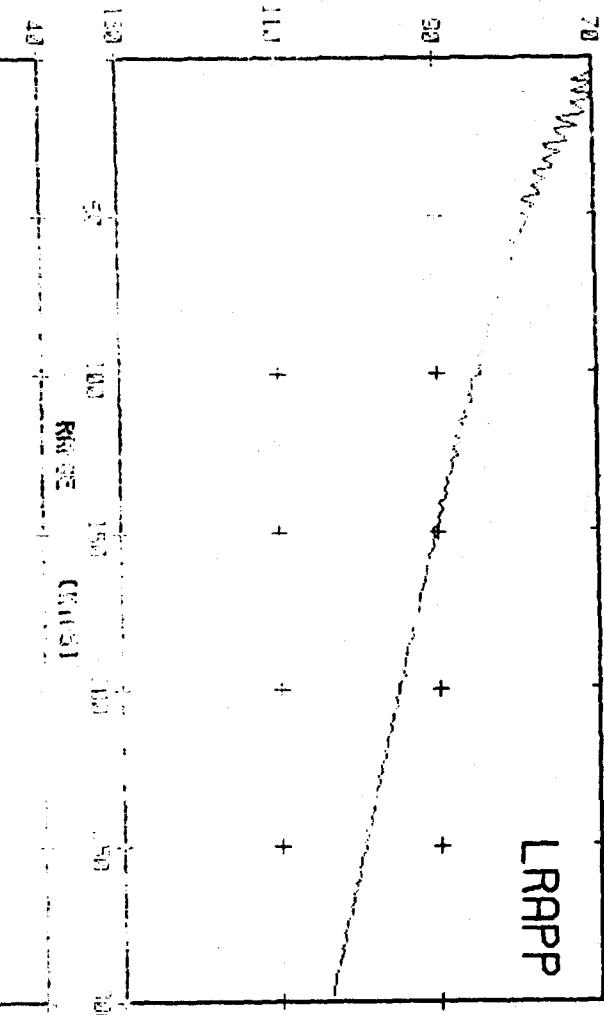
S 20 R 60 F 1200

1450 M/S 1500 1550

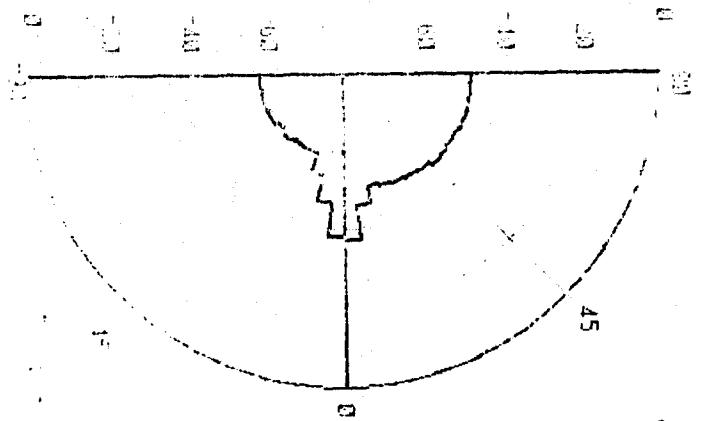
ARRIVAL ANGLE



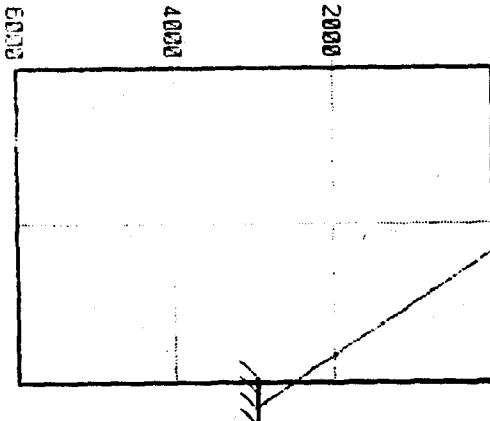
DB LOSS



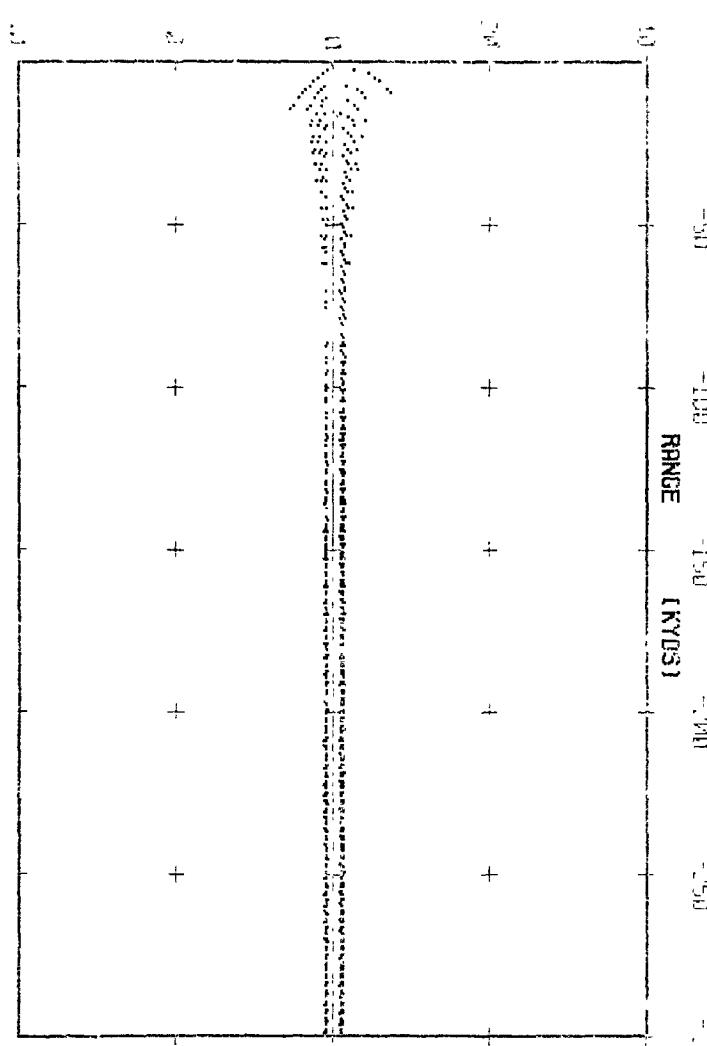
NOISE (DE)



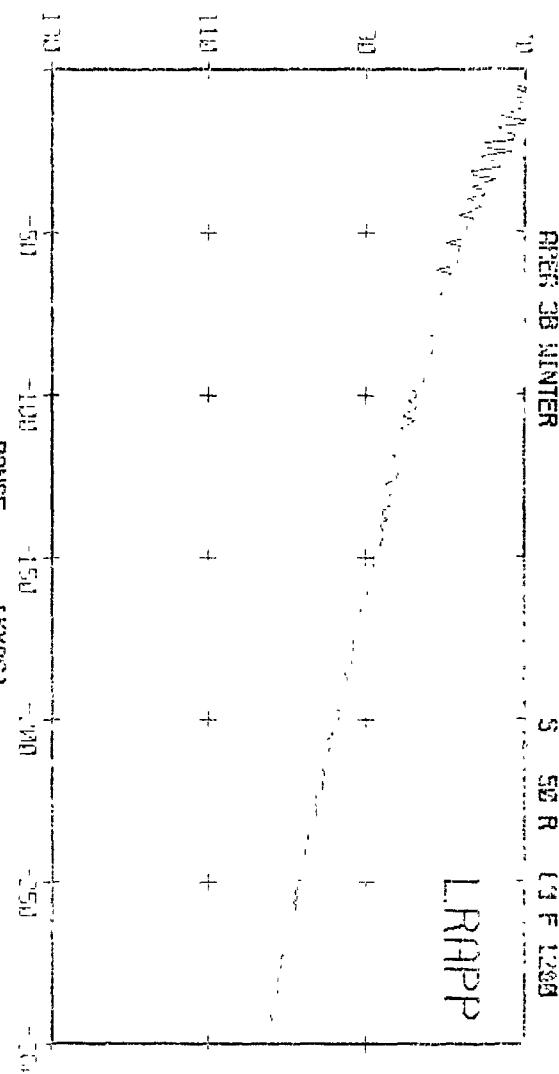
DEPTH IN METERS



ARRIVAL ANGLE

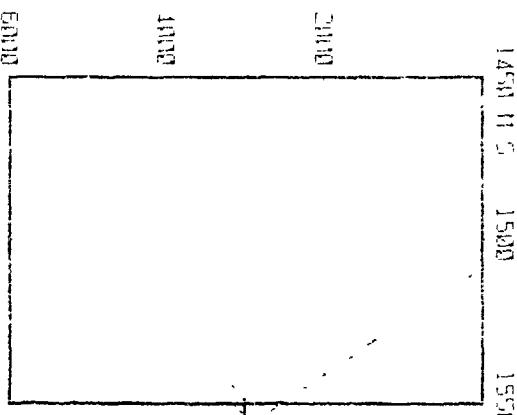


DB LOSS

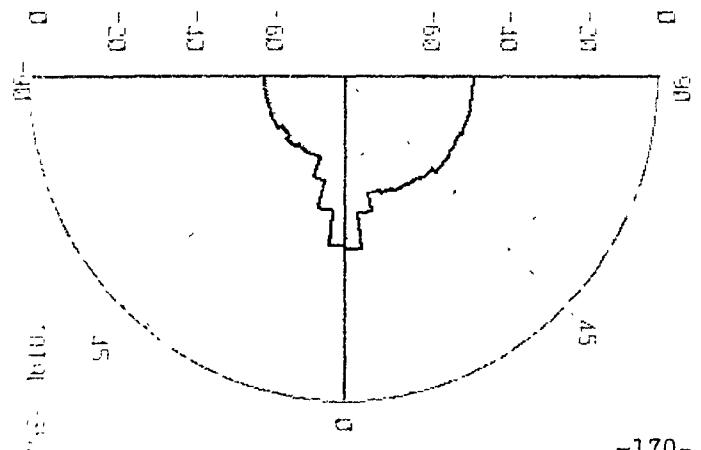


L RAPP

DEPTH IN METERS



NOISE (DB)



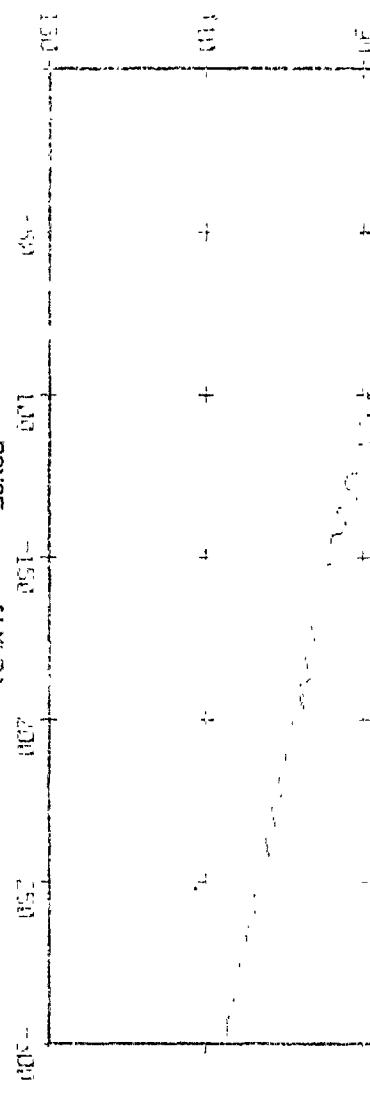
RIVER DE MISTER

S 35°2' R 03 F 1250

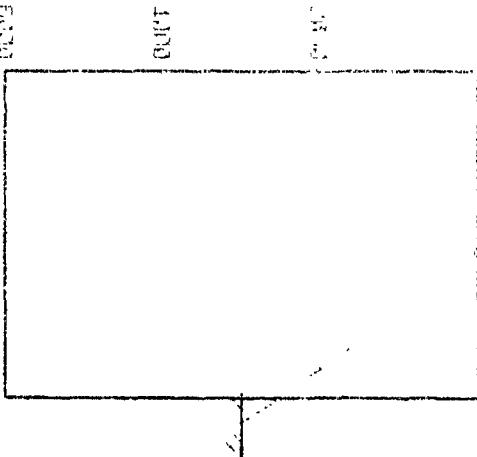
1400 H.C. 1500 1510

LFRAPP

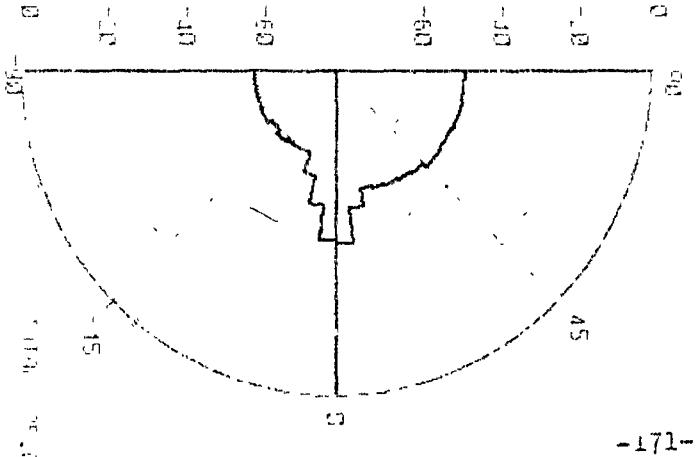
DB LOSS



DEPTH IN METERS



NOISE (DB)



70

AREA 3B WINTER

S 20 R 100 F 1200

1450 M/S 1500 1550

LRAPP

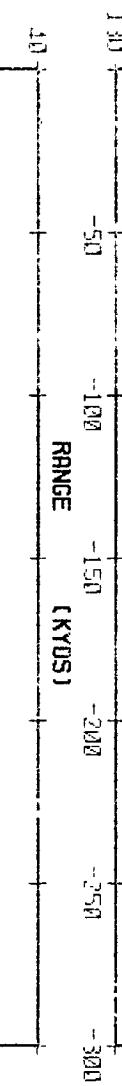
DB LOSS

90 +
110 +
+
+
+
+
+
+
+

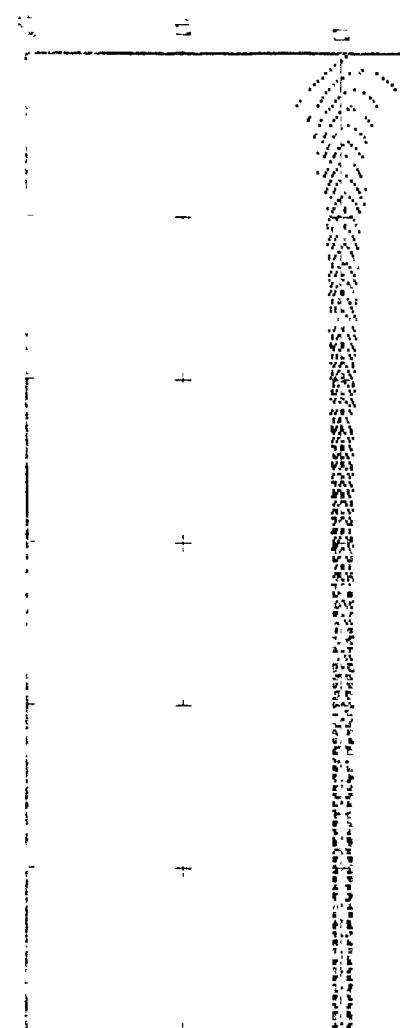
2000

4000

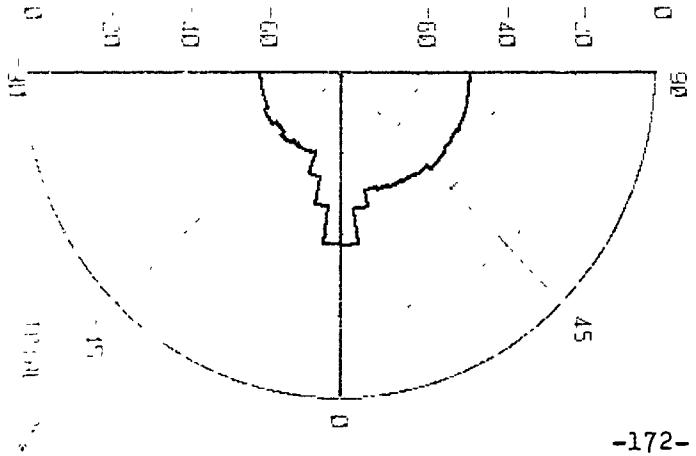
6000



ARRIVAL ANGLE



NOISE (DB)

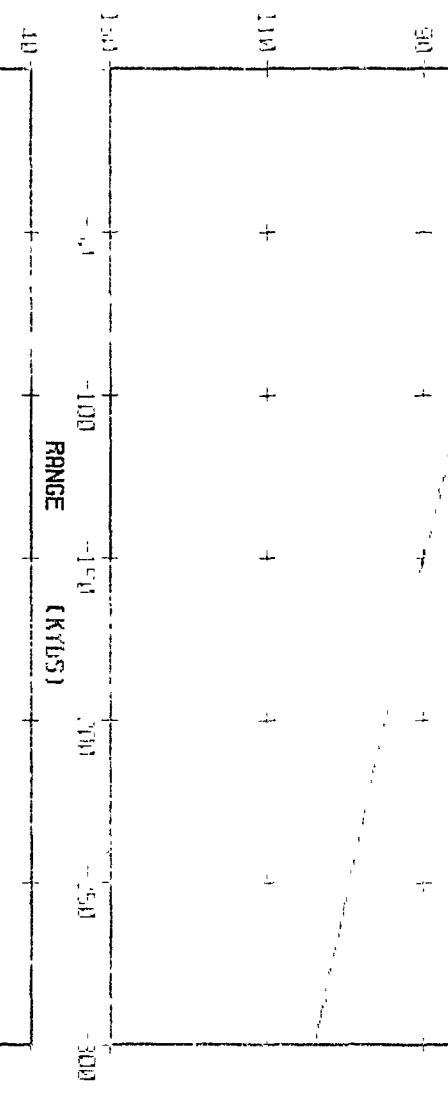


AIRER 38 WINTER S 59 R 160 F 1228

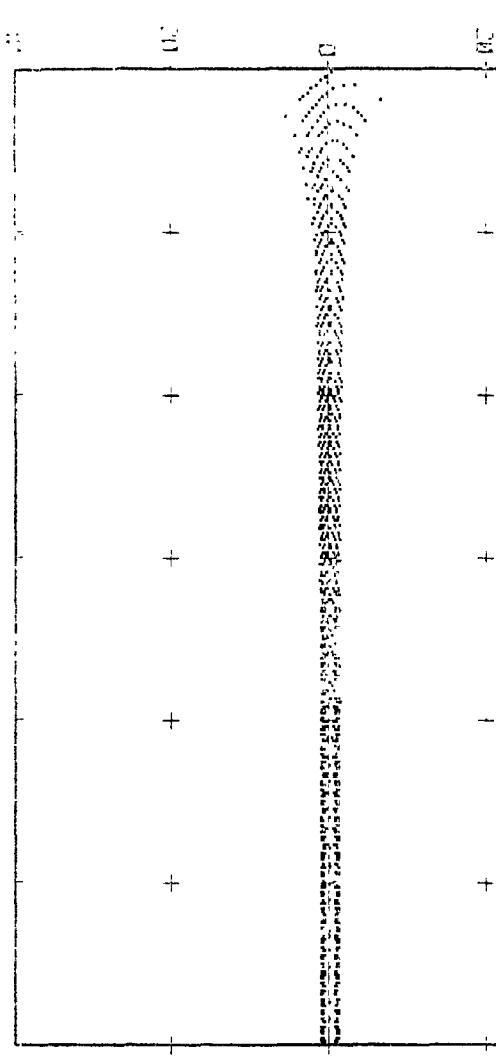
1450 1455 1500 1550

LFRAPP

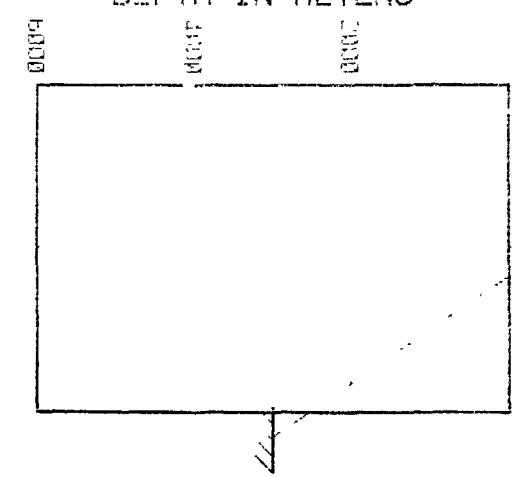
DB LOSS



ARRIVAL ANGLE



DEPTH IN METERS



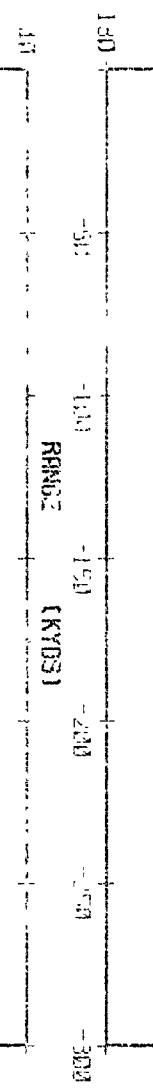
GRNR 33 WENWIT

S Snd R 116 F 1280

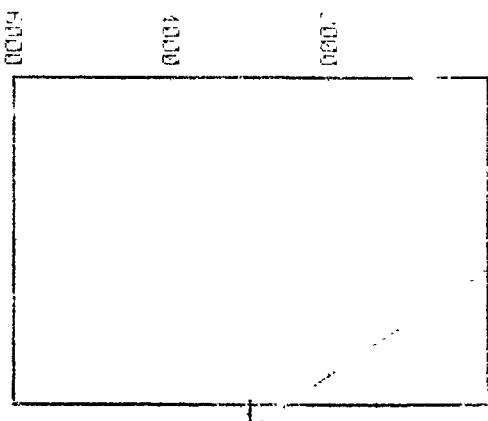
1452 115 1530 1500

L RAPP

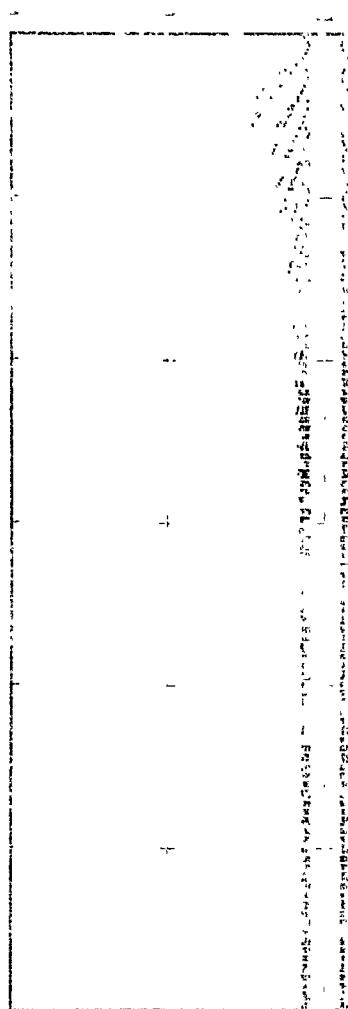
DB LOSS



DEPTH IN METERS



ARRIVAL ANGLE



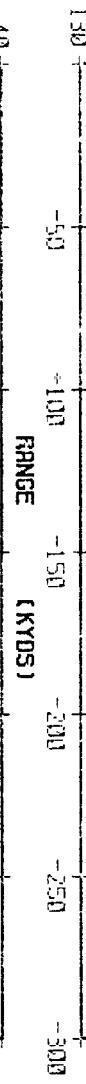
PAGE 33 NUMBER

S 20 R 32 F 1223

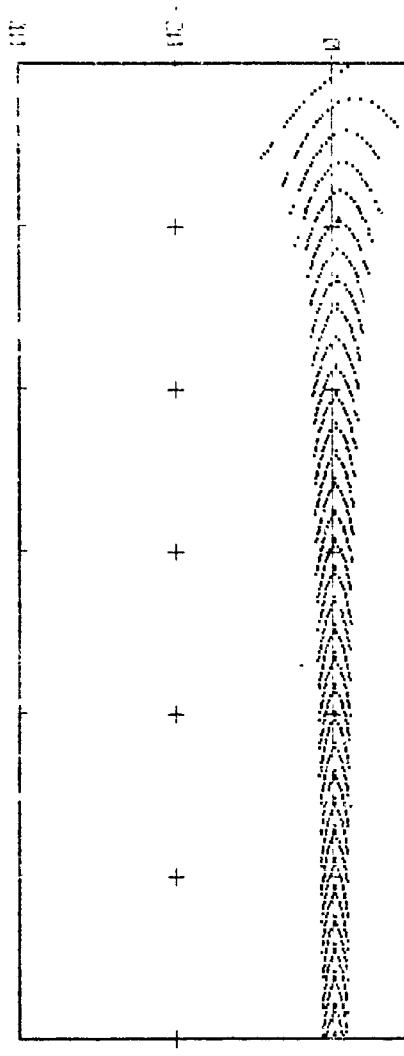
1450 145 1500 1550

LRAFP

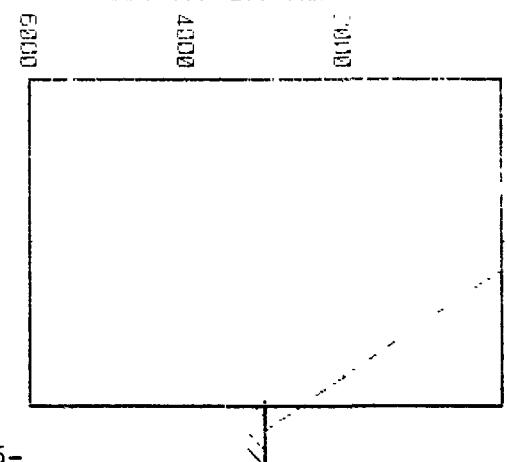
DB LOSS



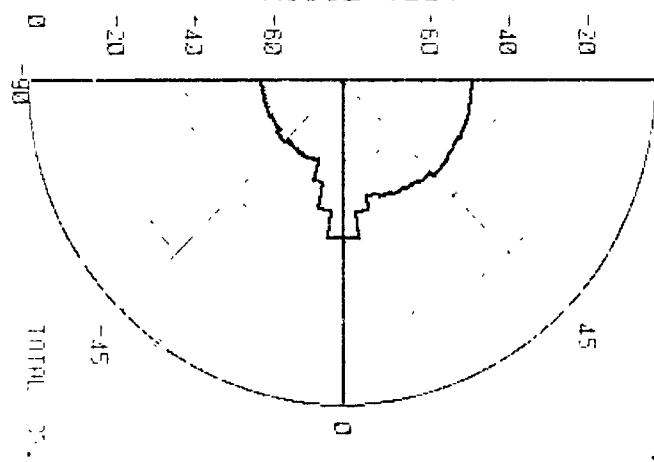
ARRIVAL ANGLE



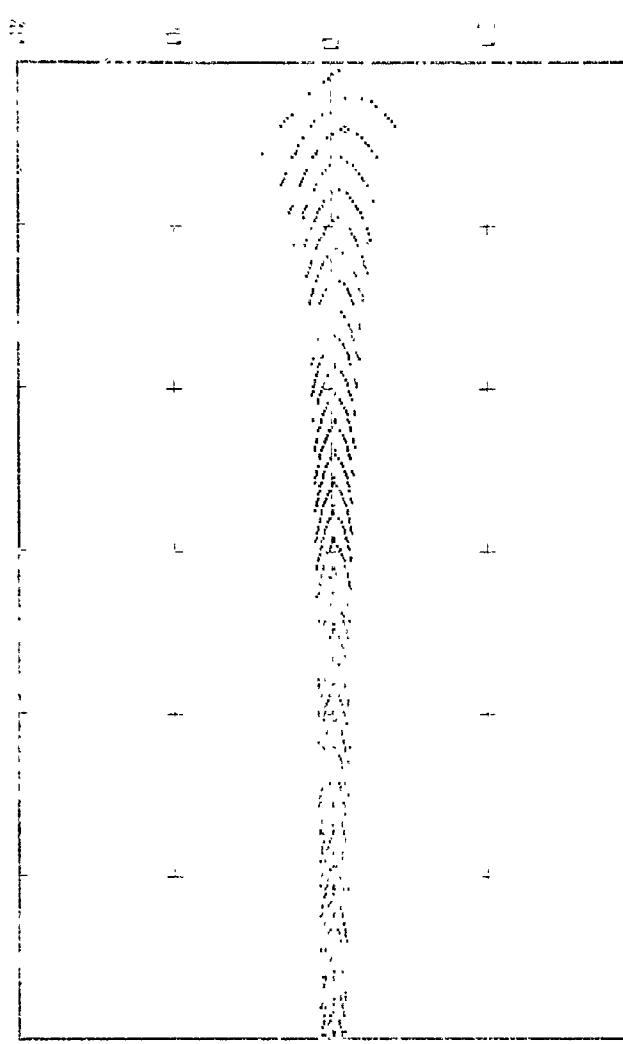
DEPTH IN METERS



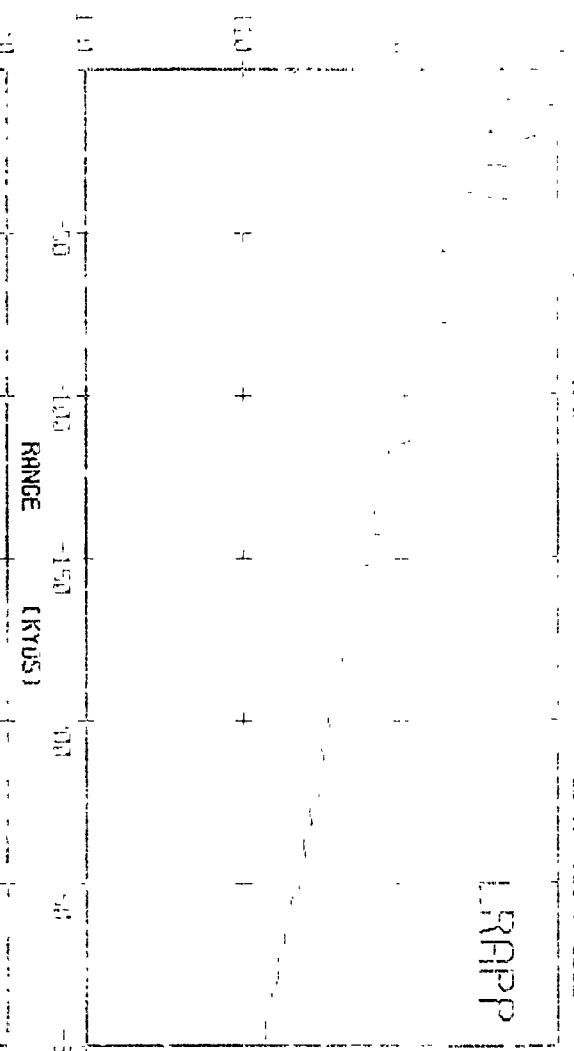
NOISE (DB)



ARRIVAL ANGLE

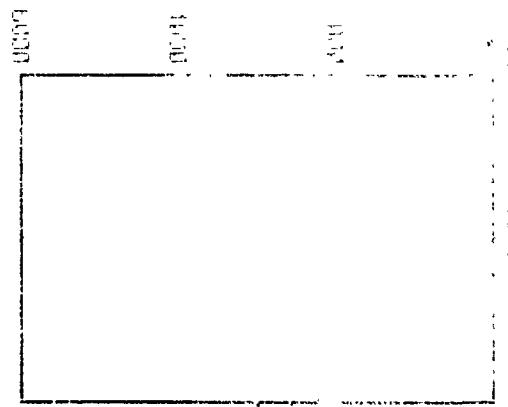


DEPTHS

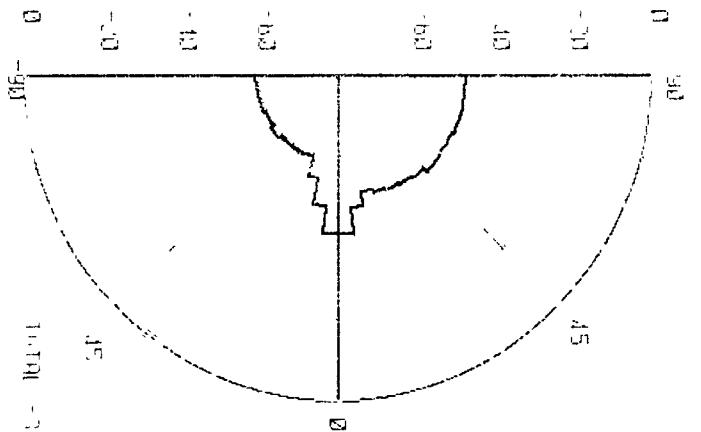


LRRAPP

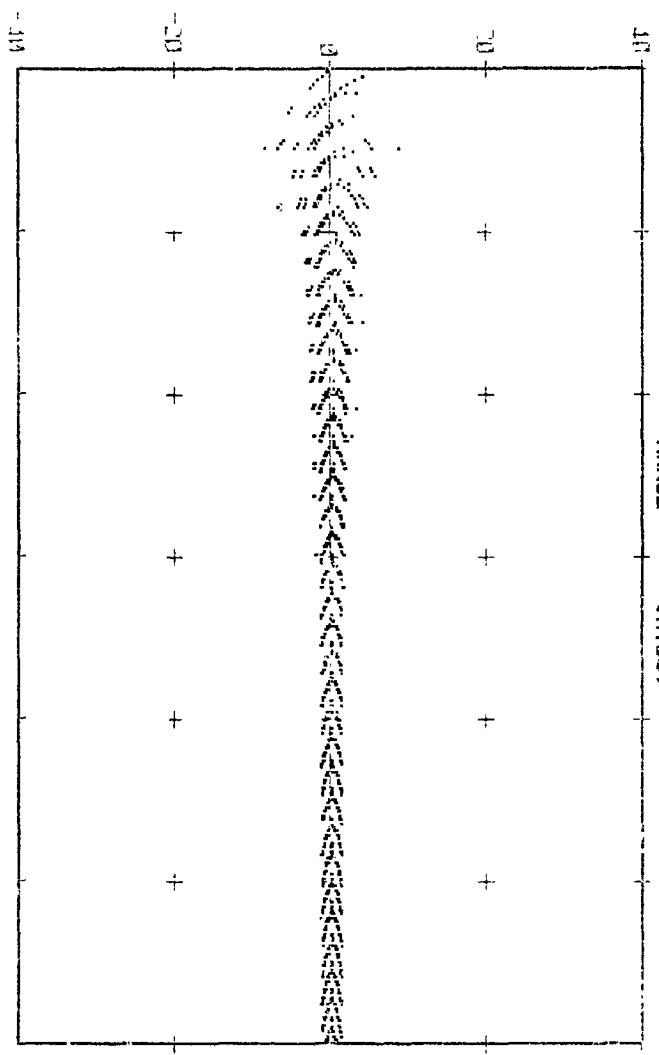
DEPTH IN METERS



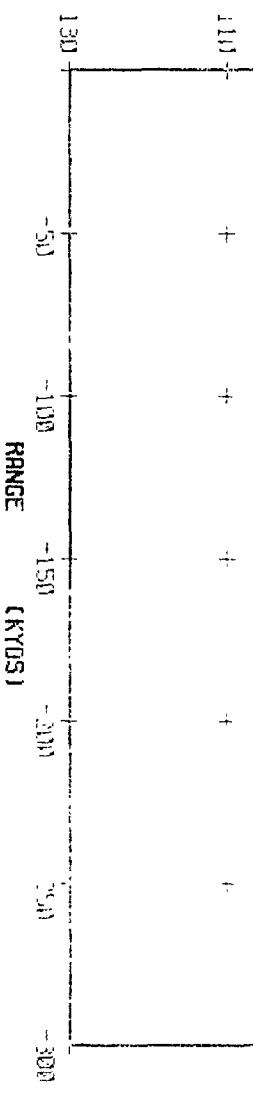
NOISE (DB)



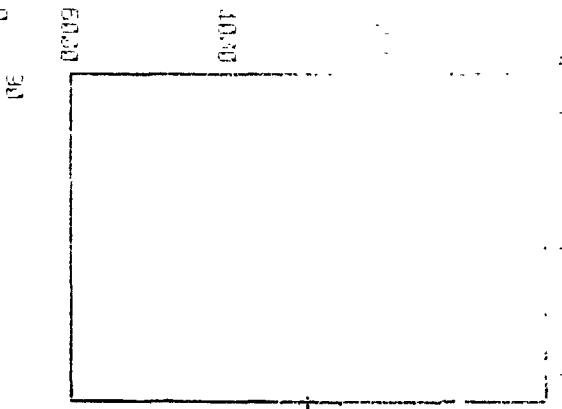
ARRIVAL ANGLE



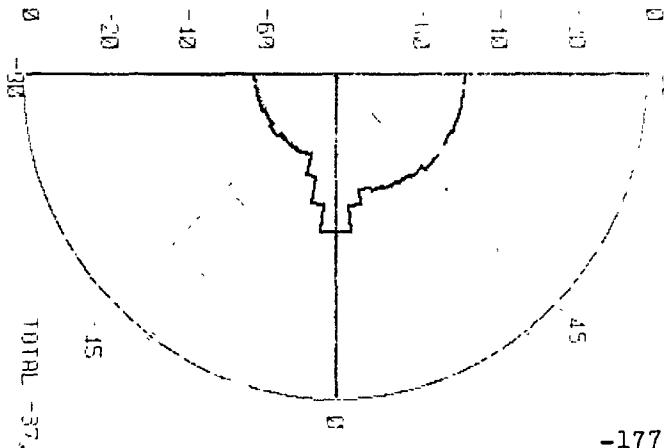
DB LOSS



DEPTH IN FEET

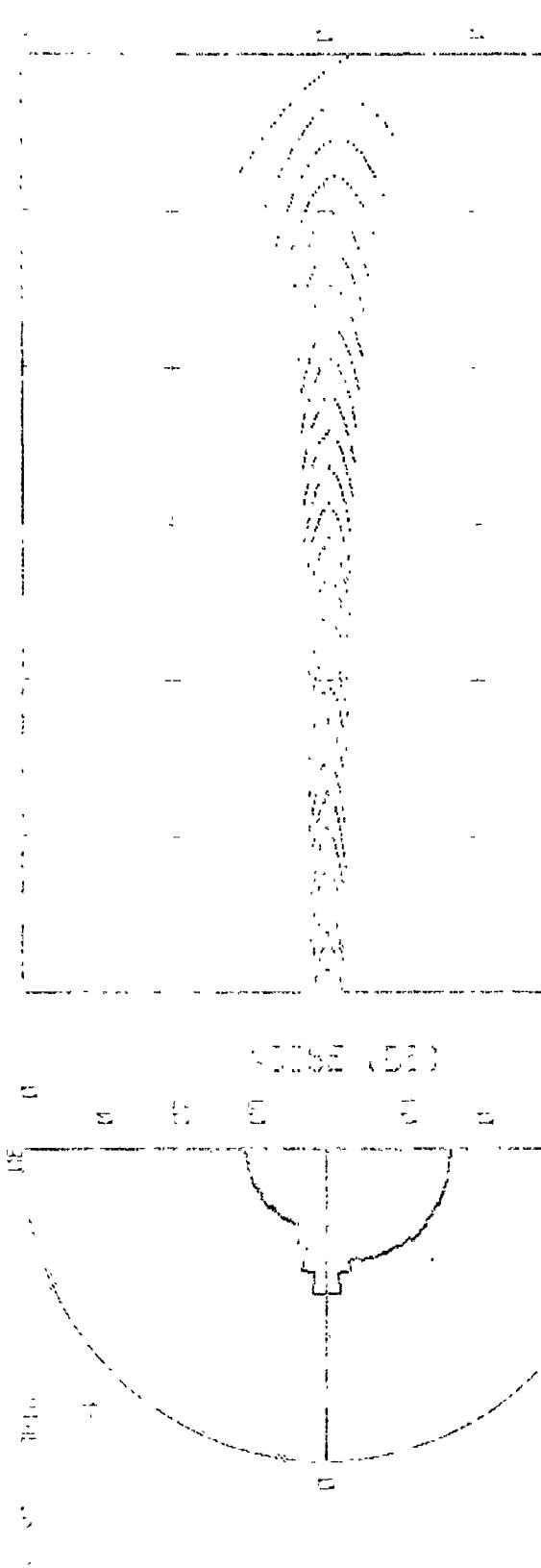


NOISE (DB)

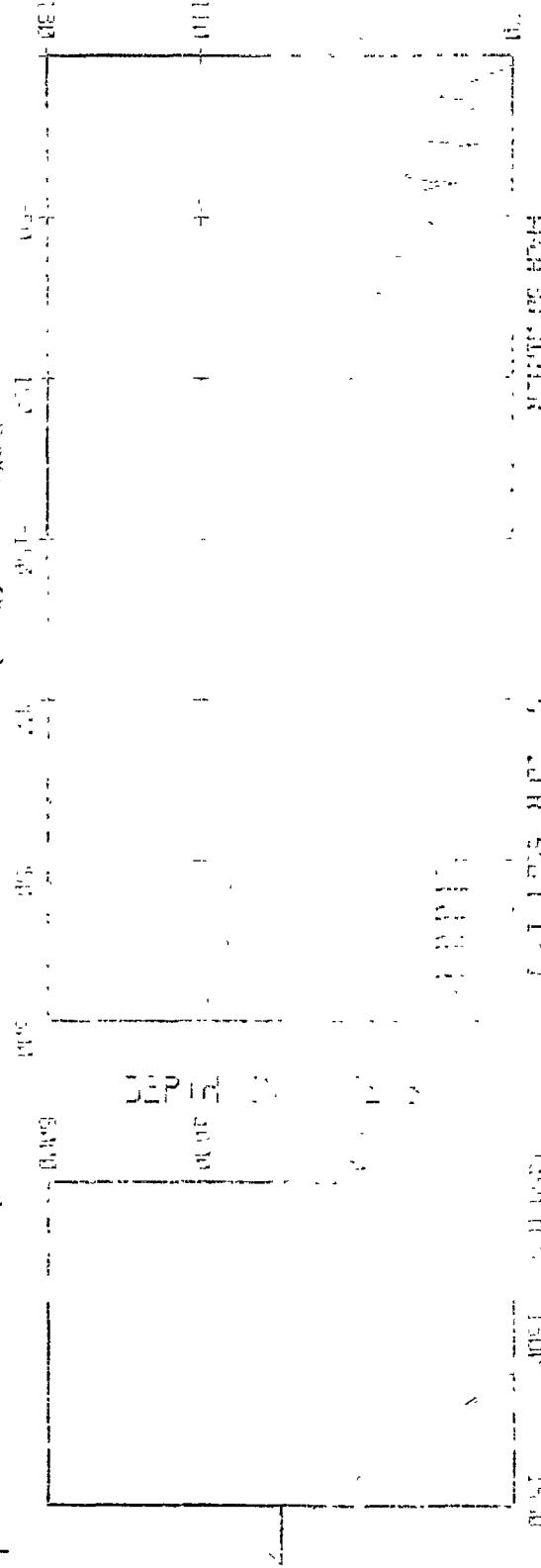


TOTAL -37.0 dB

HISTORY - ENGLE



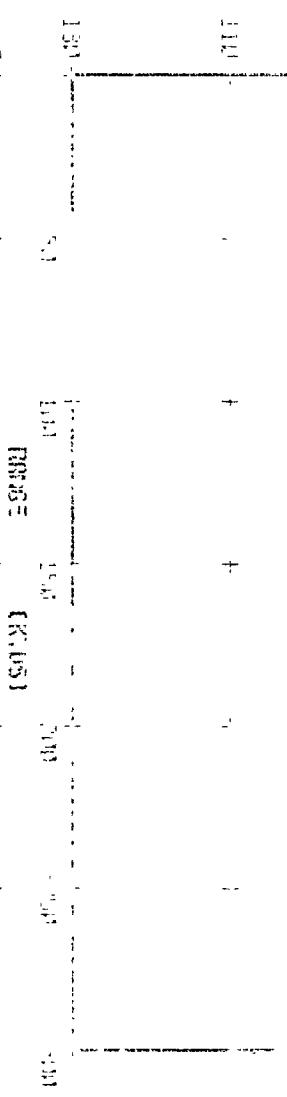
DE LOG



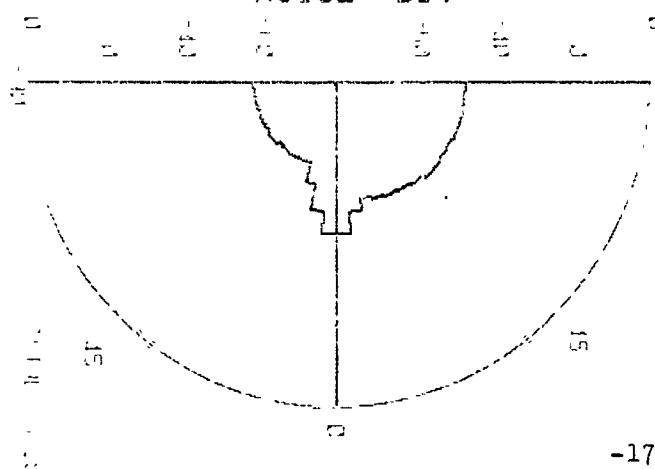
ARRIVAL ANGLE



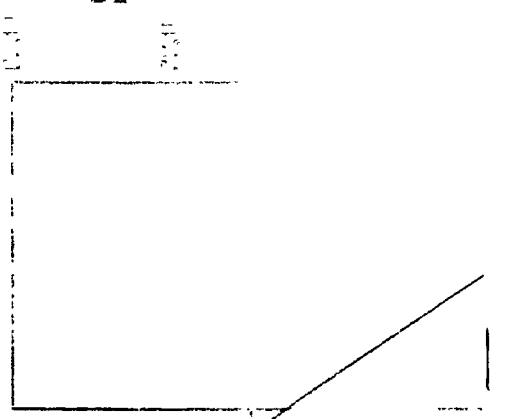
DB LOG



NOISE (DB)



DEPTH



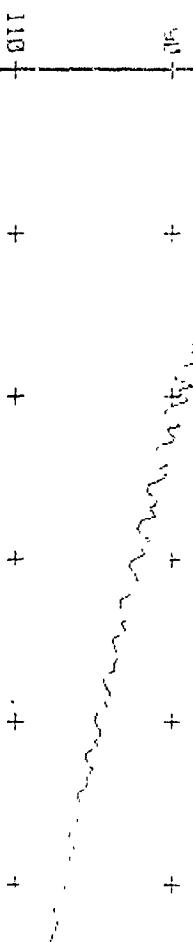
AREA 3B WINTER

S 300 R 500 F 1200

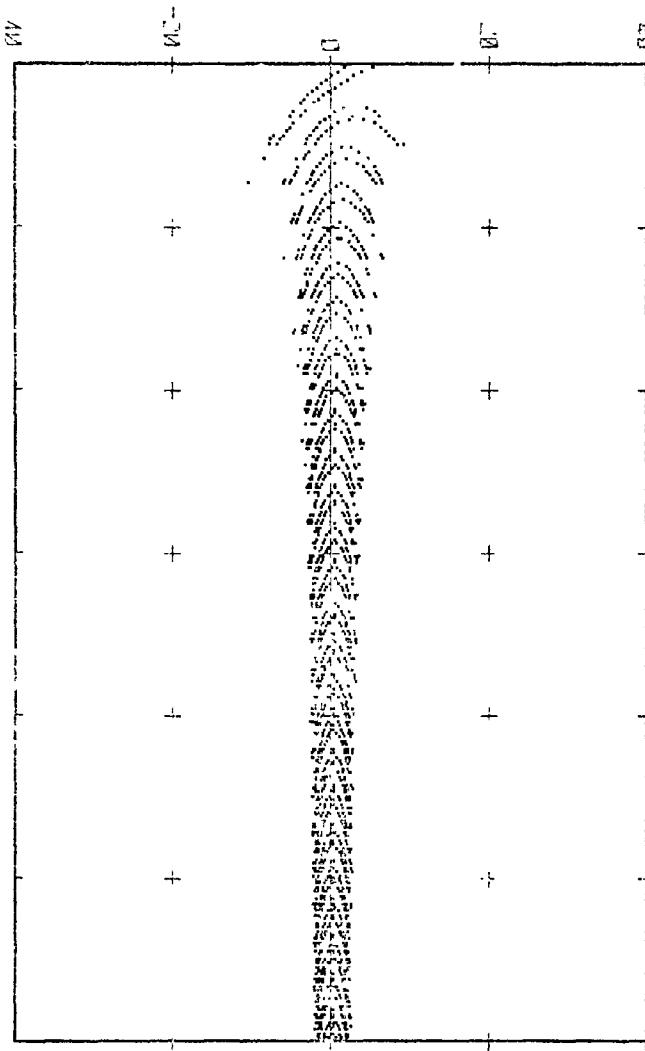
1450 11/5 1500 1550

LRAPP

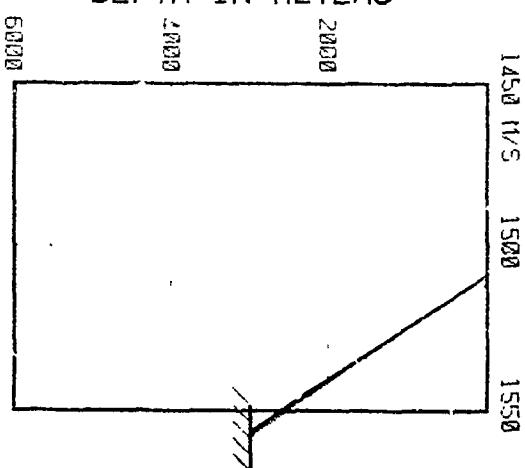
DB LOSS



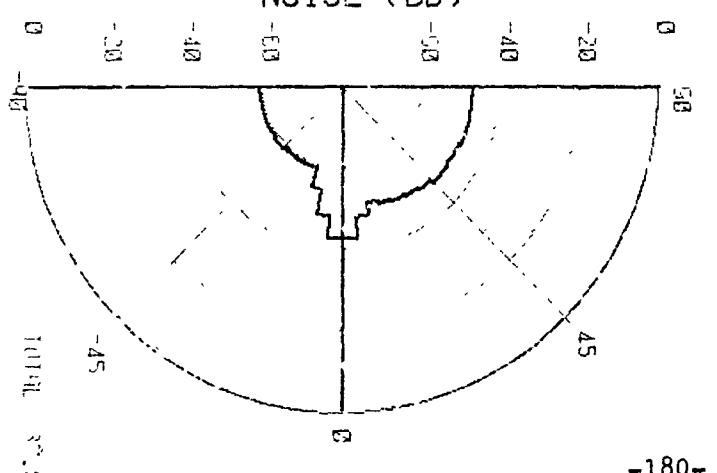
ARRIVAL ANGLE

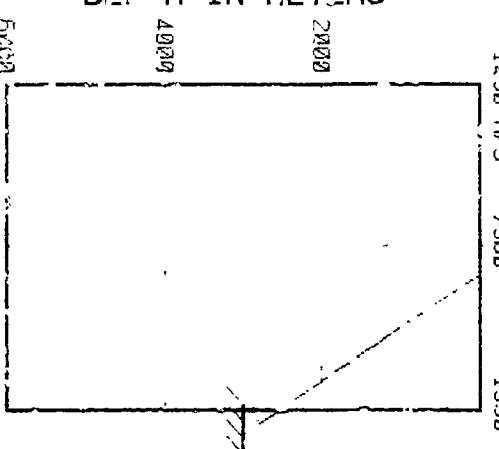
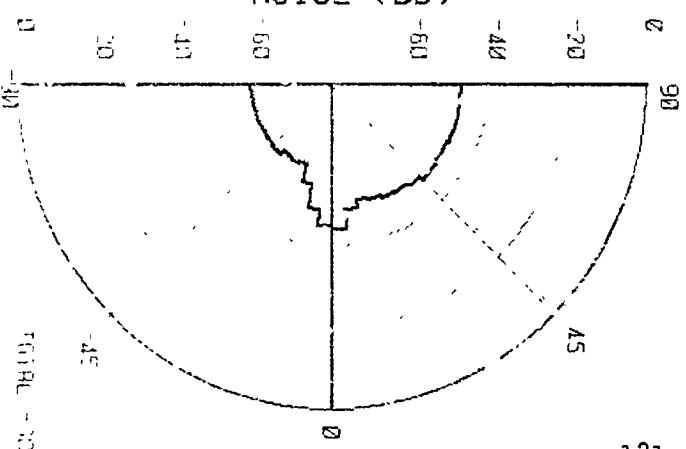
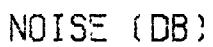
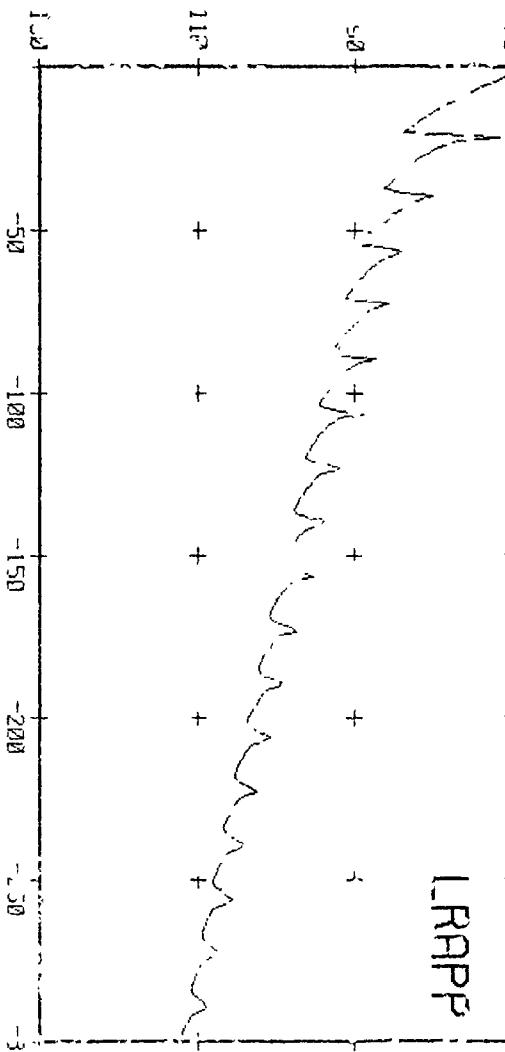
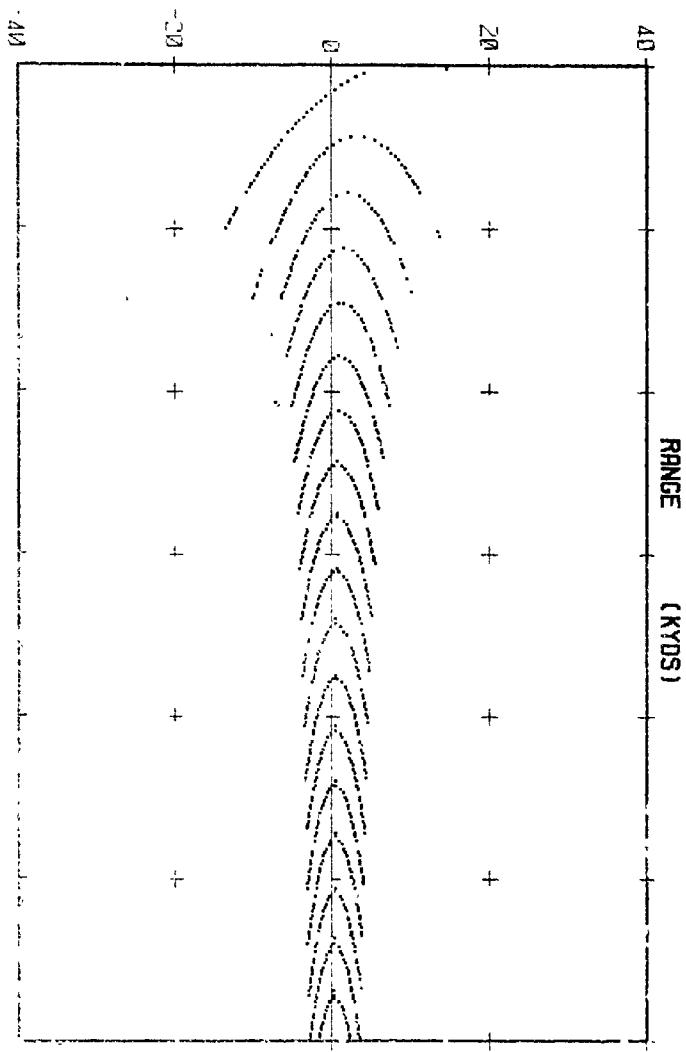
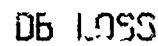


DEPTH IN METERS

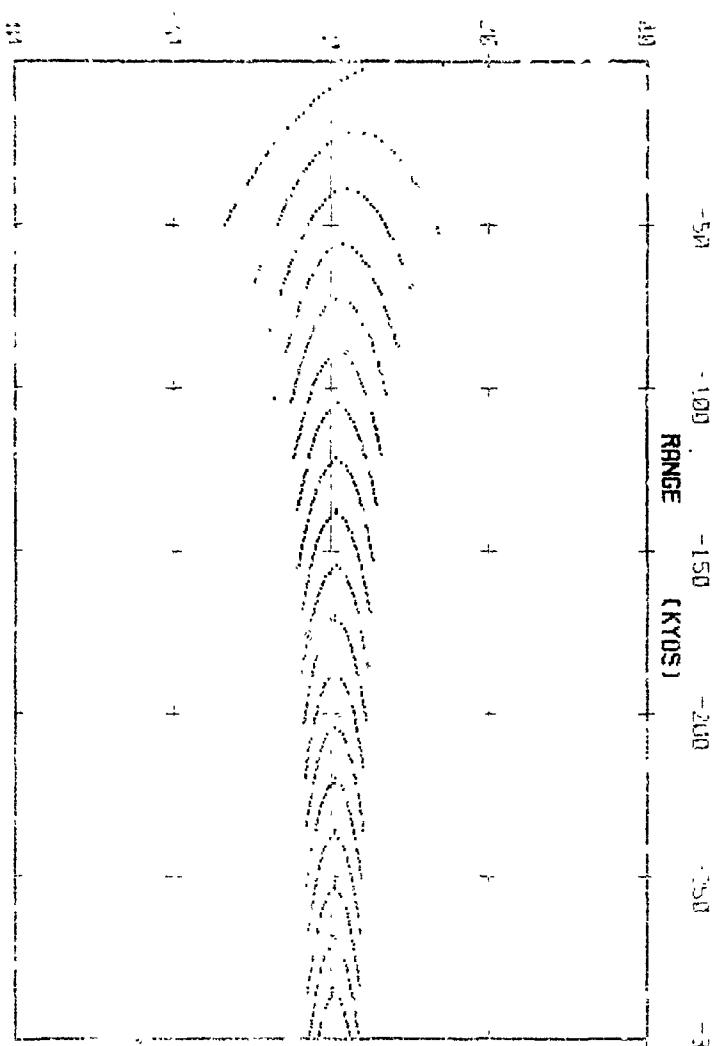


NOISE (DB)

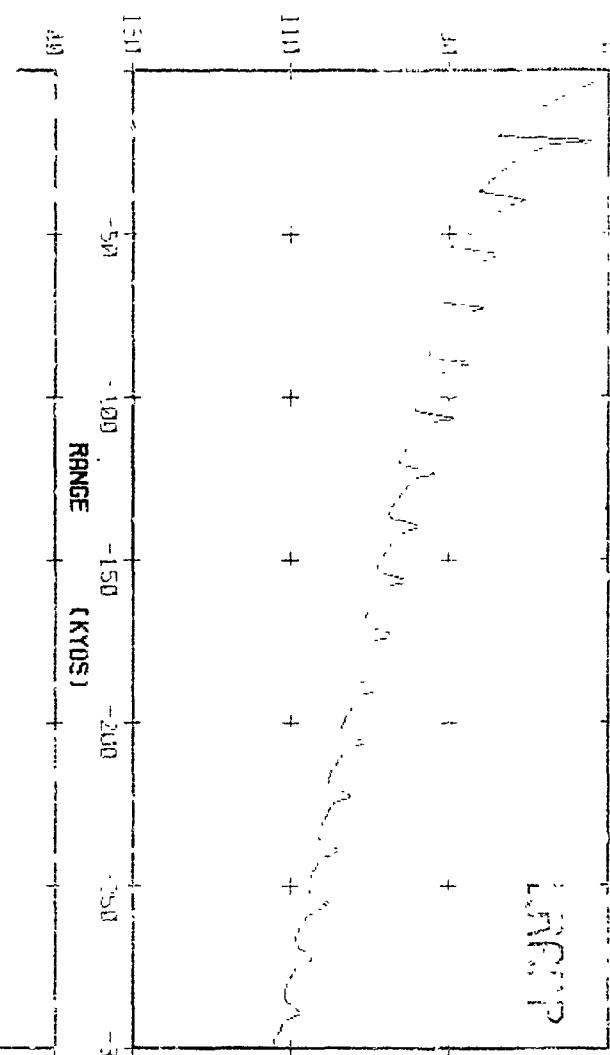




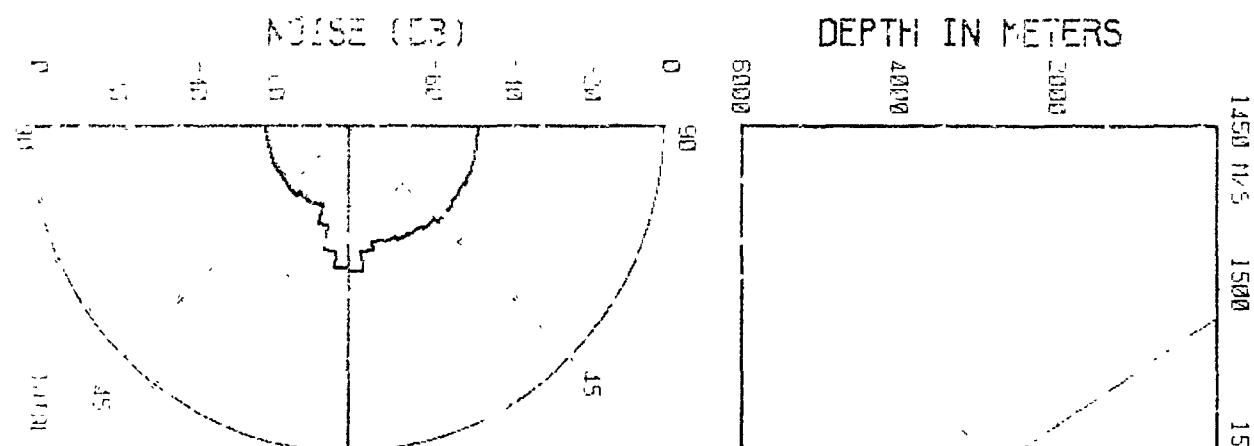
ARRIVAL ANGLE

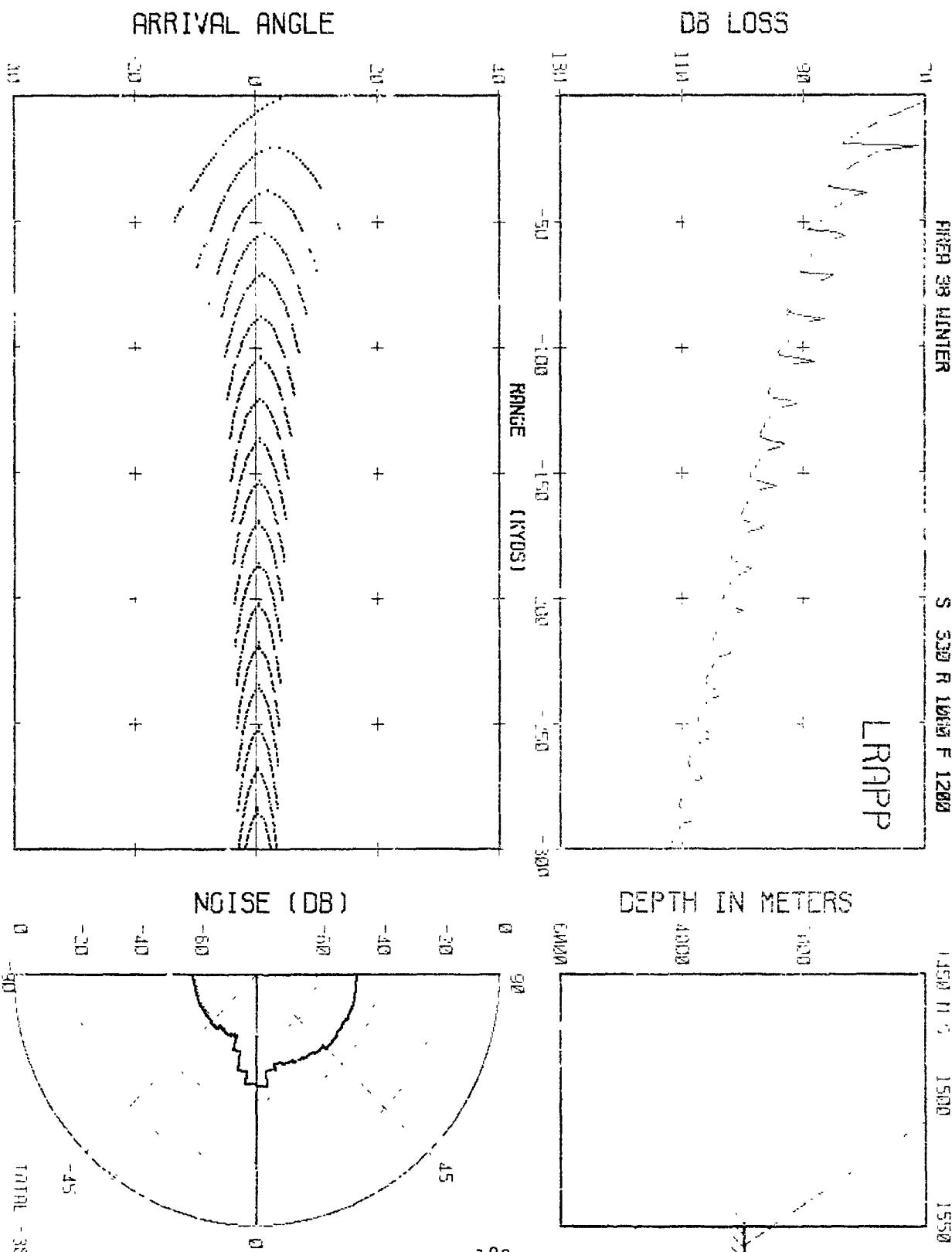


DB LOSS



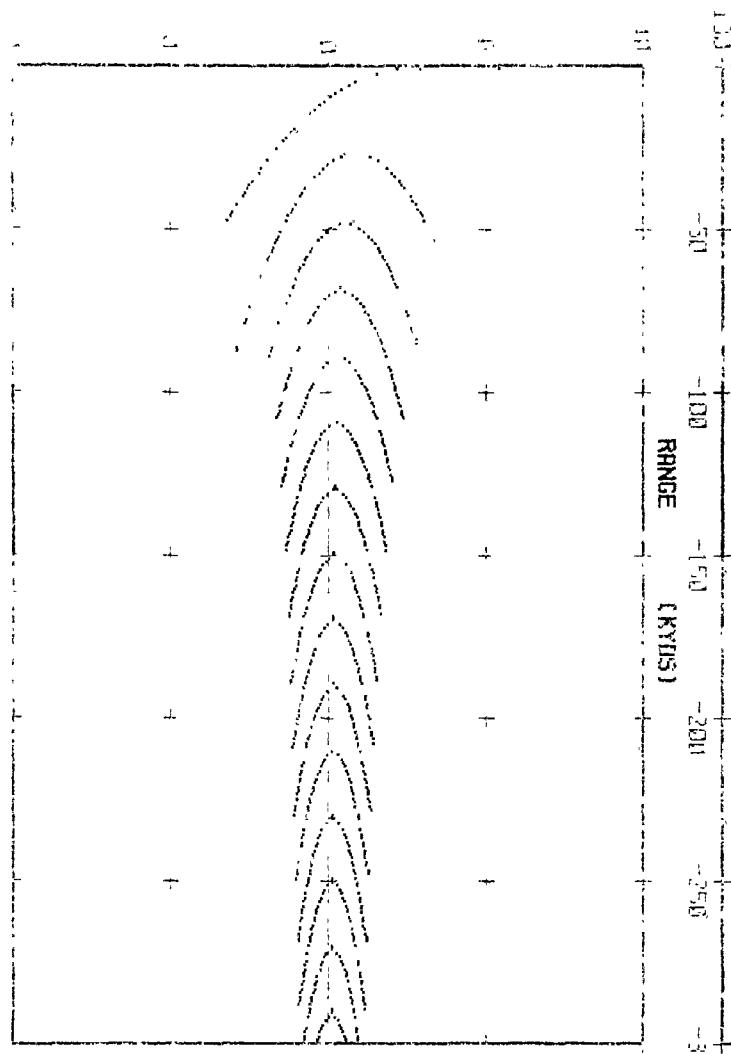
DEPTH IN METERS



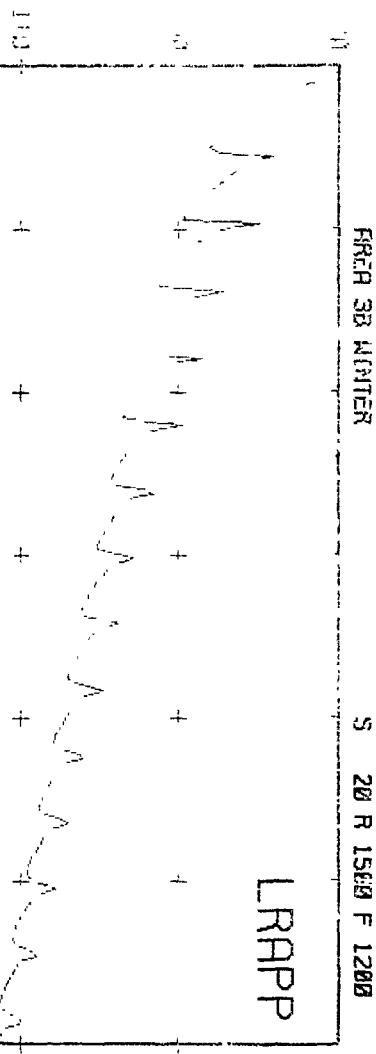


-183-

ARRIVAL ANGLE

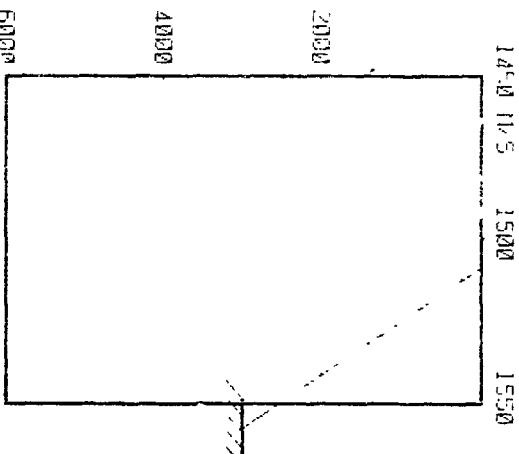


DB LOSS

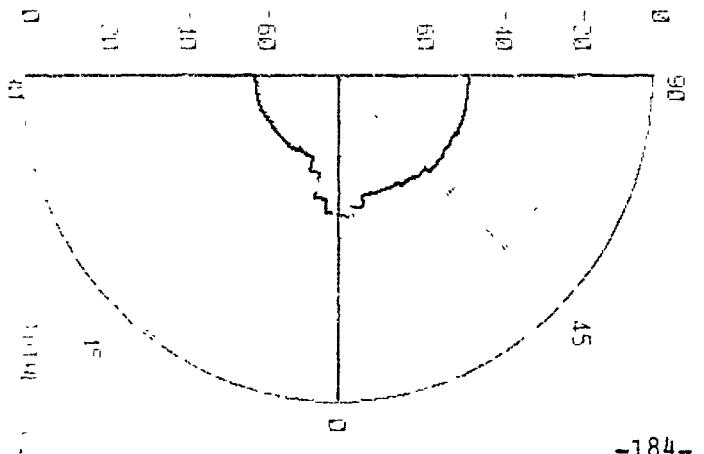


LRAFP

DEPTH IN METERS



NOISE (DB)



AREA 3B WINTER

S 50° N 150° E 1200

1450 15° S 1530 1550

LRAPP

DB LOSS

0.00

0.10

0.20

0.30

0.40

0.50

0.60

0.70

0.80

0.90

1.00

1.10

1.20

1.30

1.40

1.50

1.60

1.70

1.80

1.90

2.00

2.10

2.20

2.30

2.40

2.50

2.60

2.70

2.80

2.90

3.00

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27.60

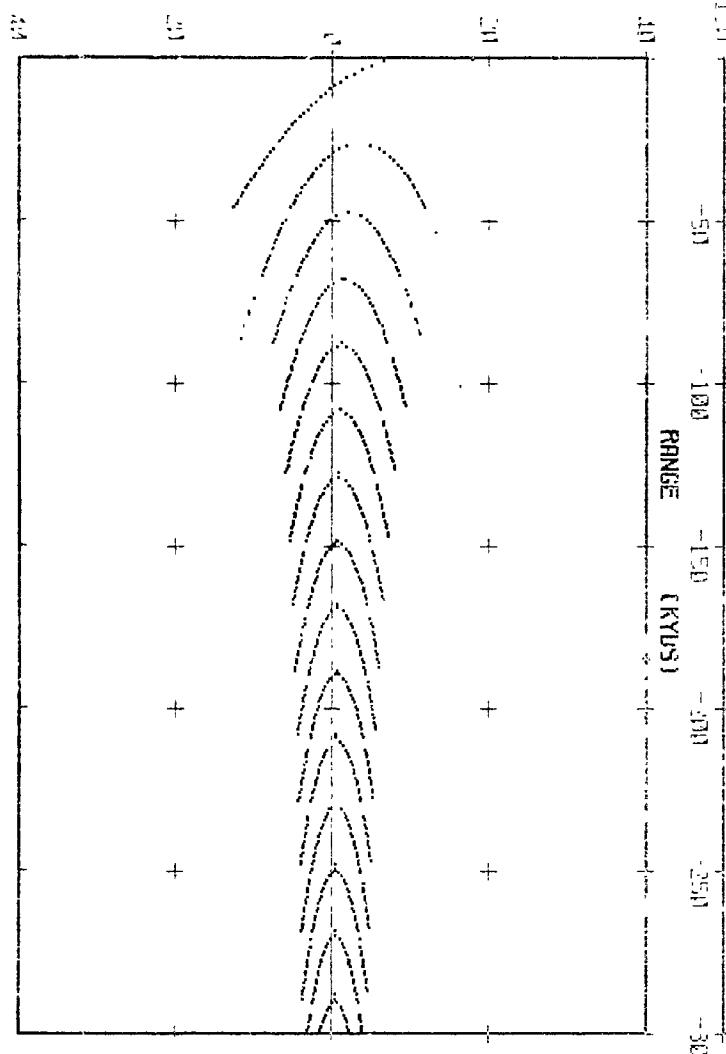
27.70

27.80

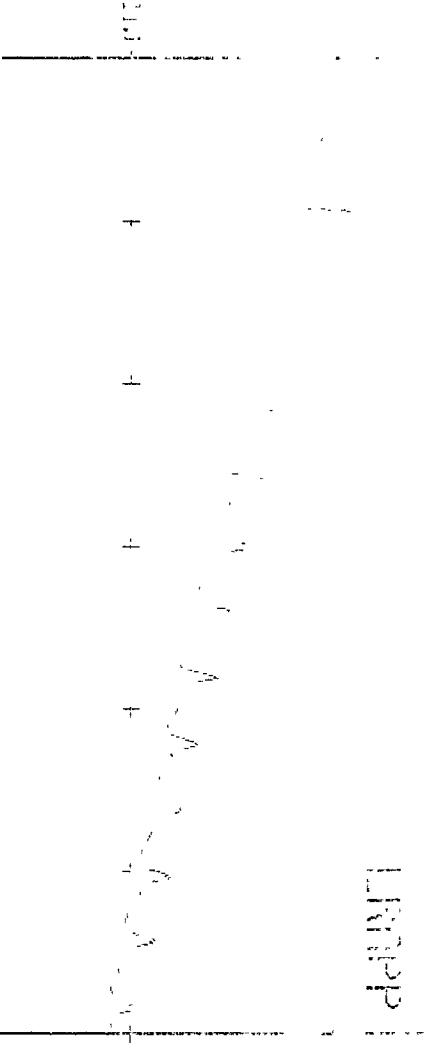
27.90

<p

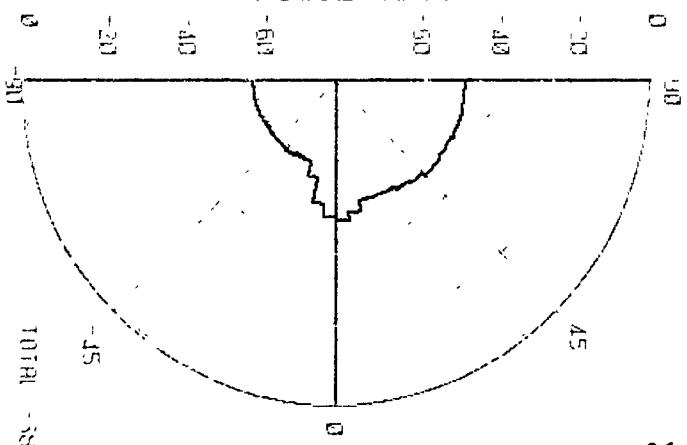
ARRIVAL ANGLE



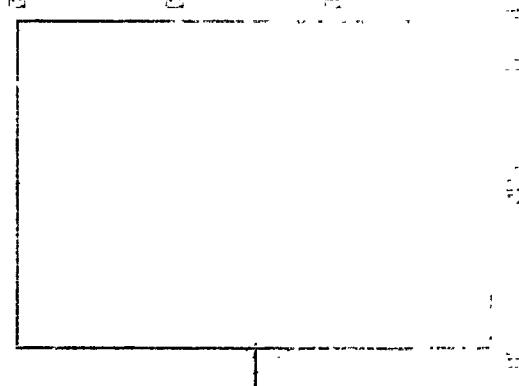
DB LOSS



NOISE (DB)



DEPTH IN X 10³ FT

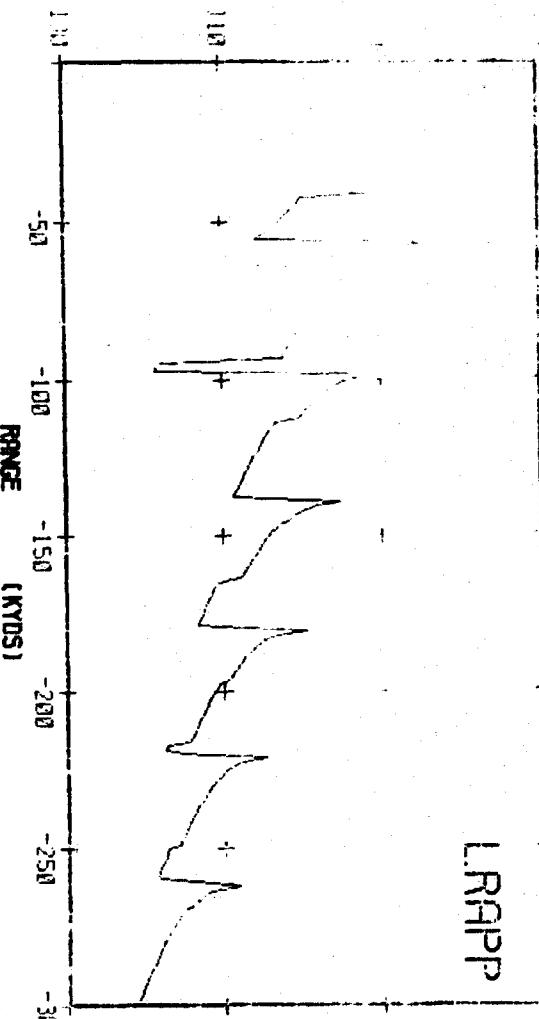


EXPT 58 WINTER

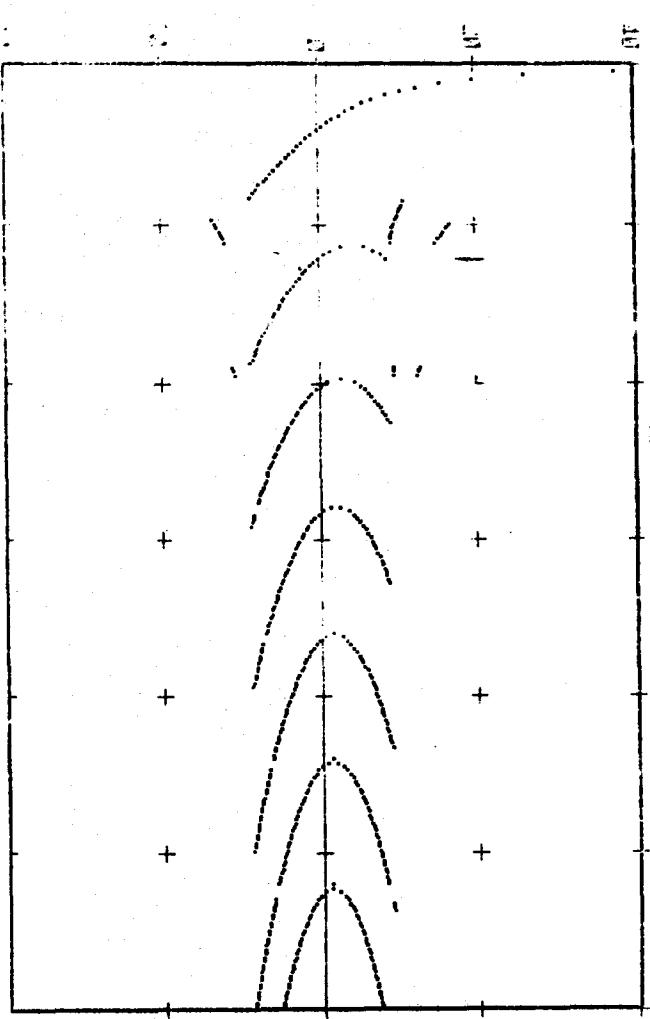
S 28 R 60 S F 1230

L.RAPP

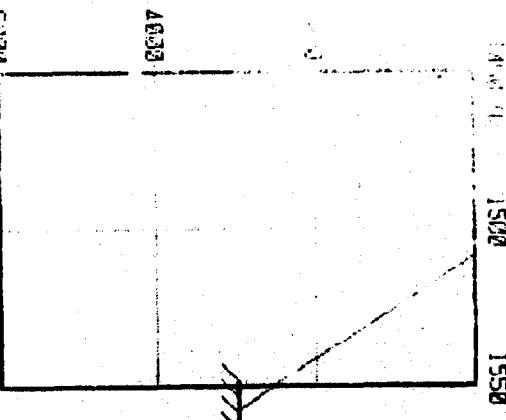
DB LOSS



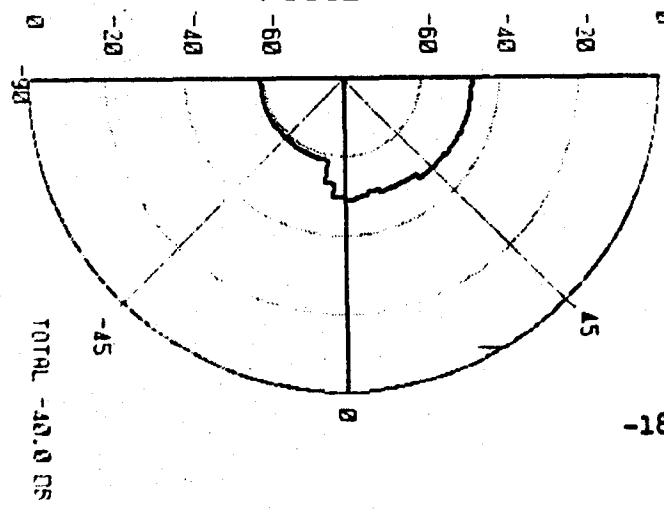
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

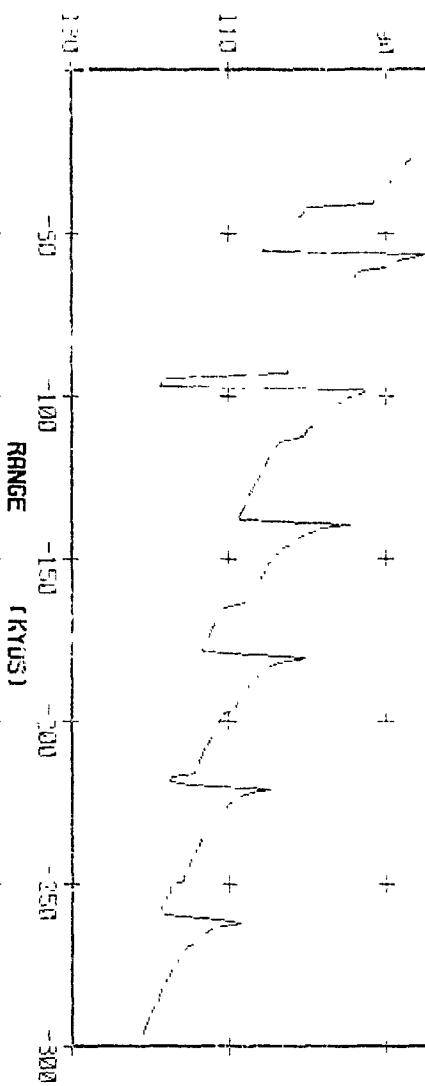


RIVER 38 WINTER

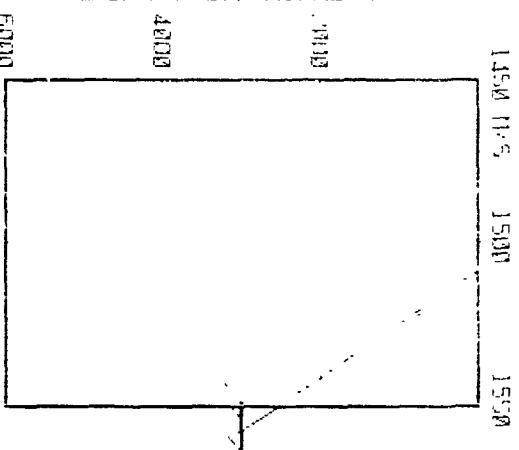
S 50 R Grid F 1250

LRFPP

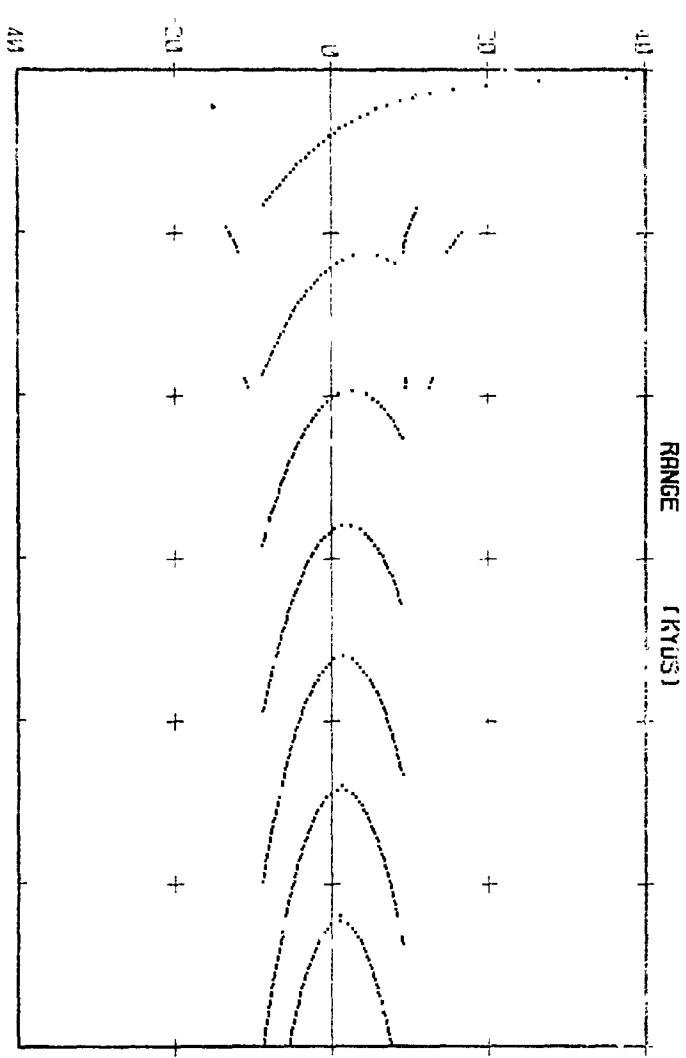
DB LOSS



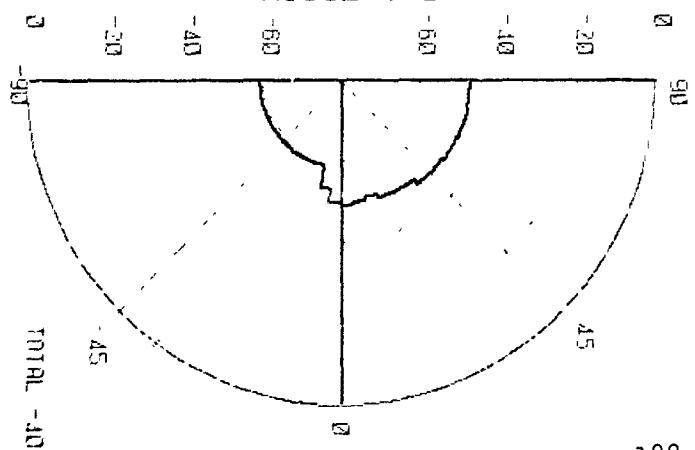
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

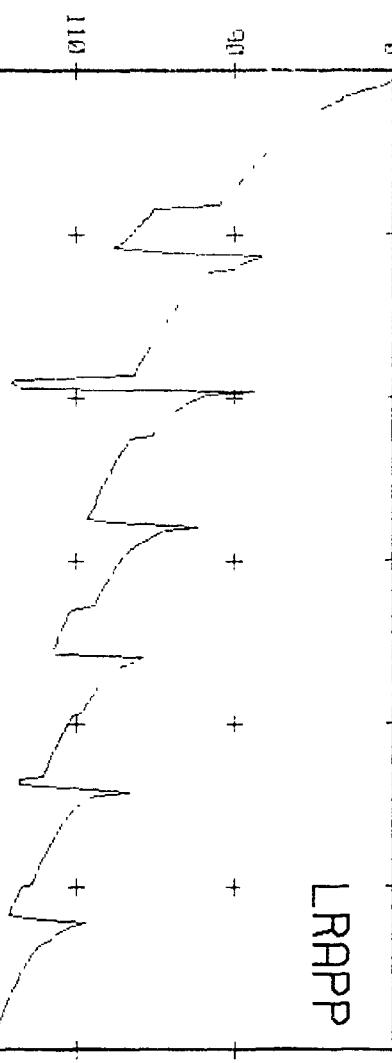


AREA 3B WINTER S 300 R 6000 F 1200

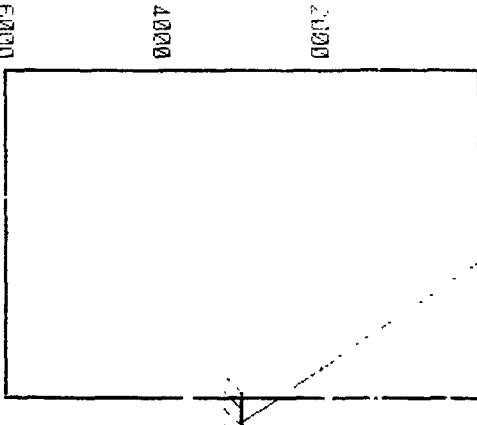
1450 M/S 1500 1550

LRAAPP

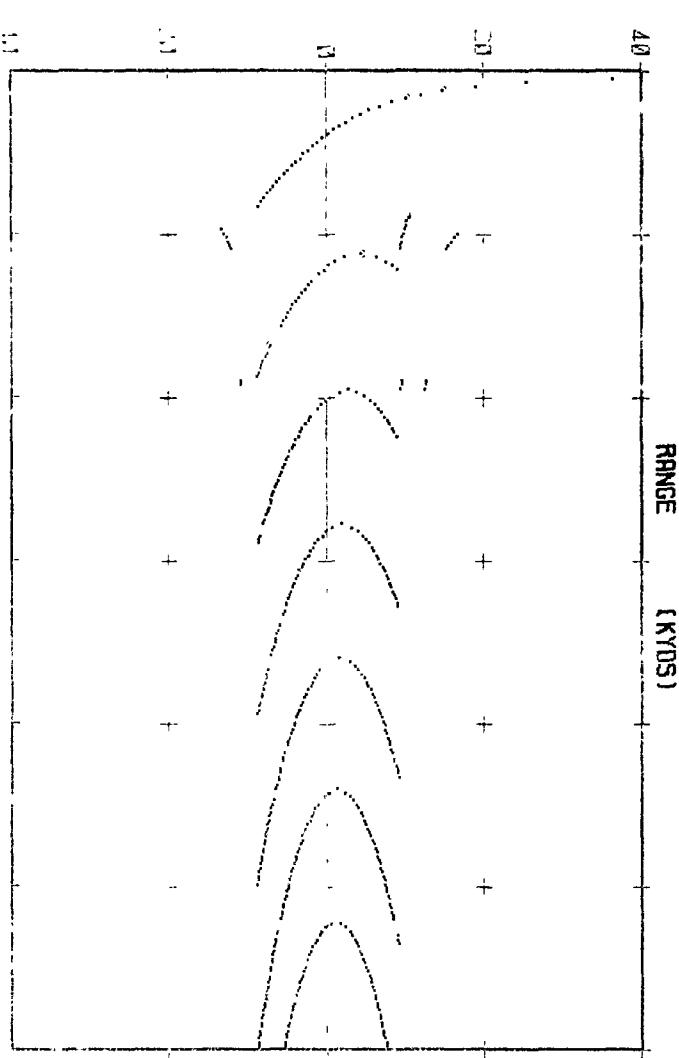
DB LOSS



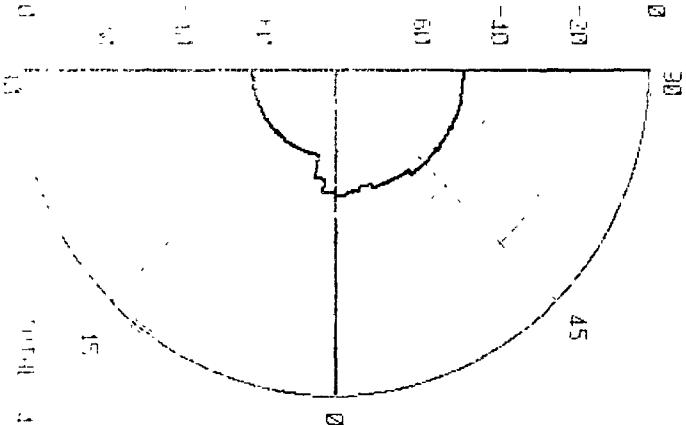
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



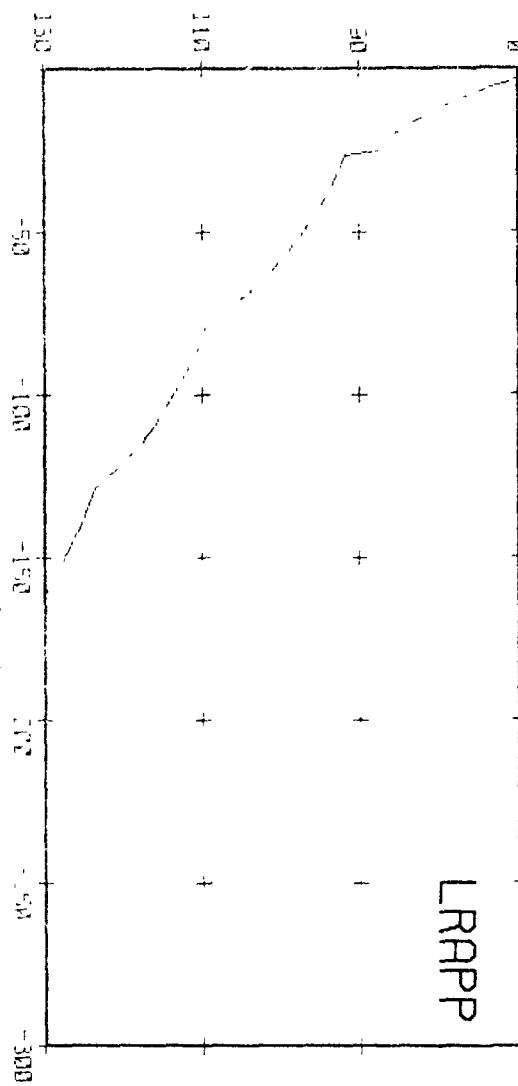
ARRER 3B WINTER

S 20 R 9842 F 1200

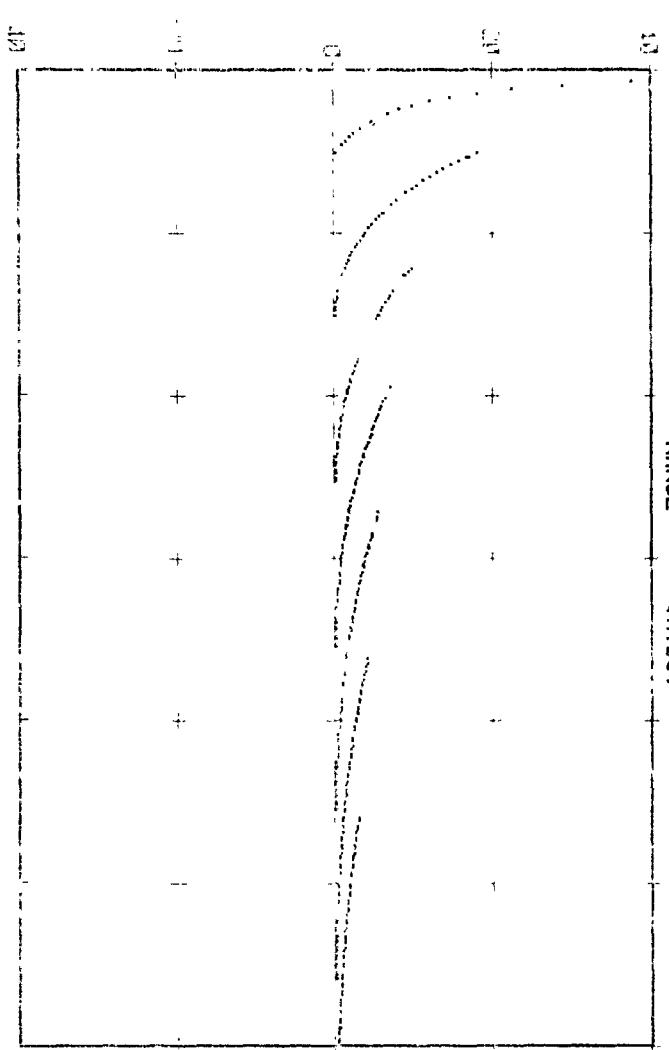
1450 M/S 1500 1550

L RAPP

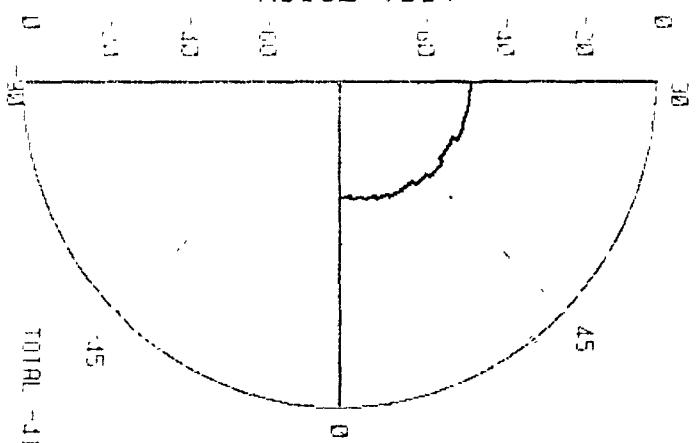
DB LOSS



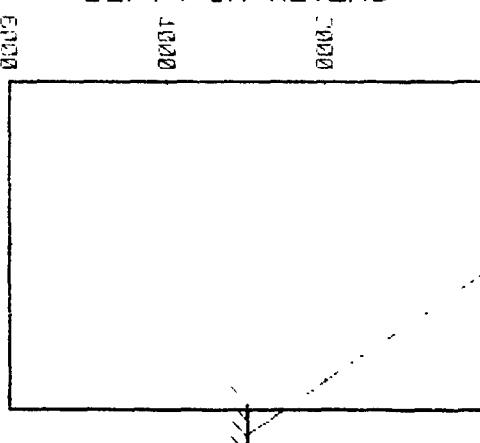
ARRIVAL ANGLE



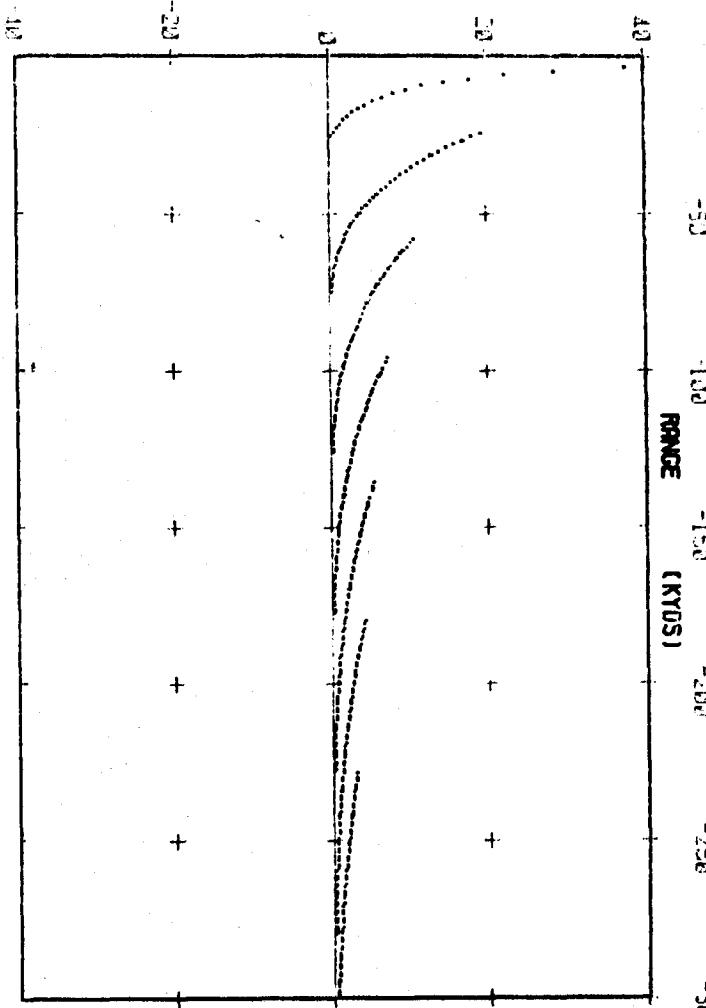
NOISE (DB)



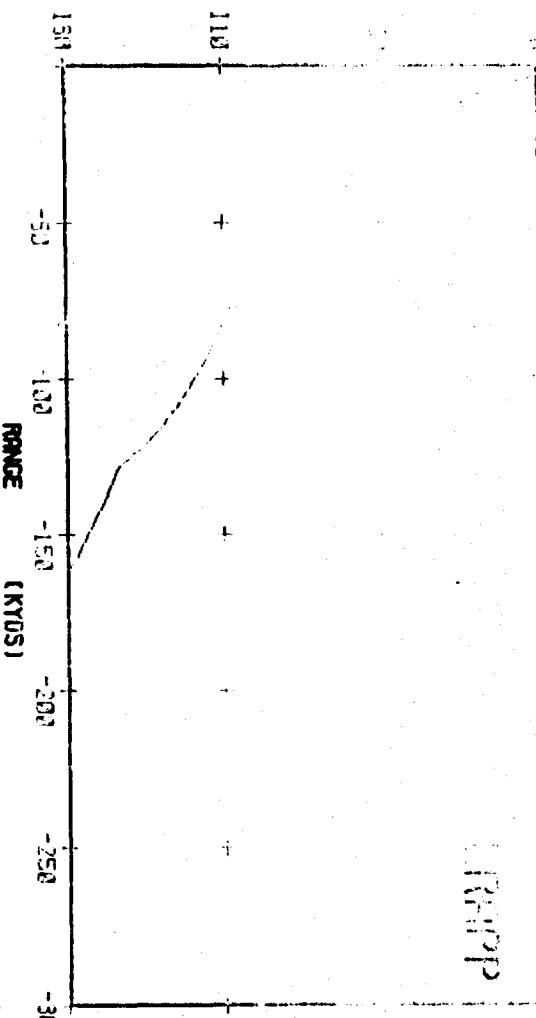
DEPTH IN METERS



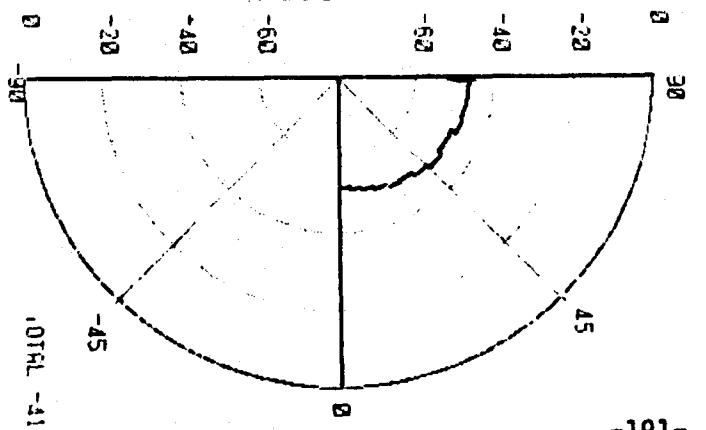
ARRIVAL ANGLE



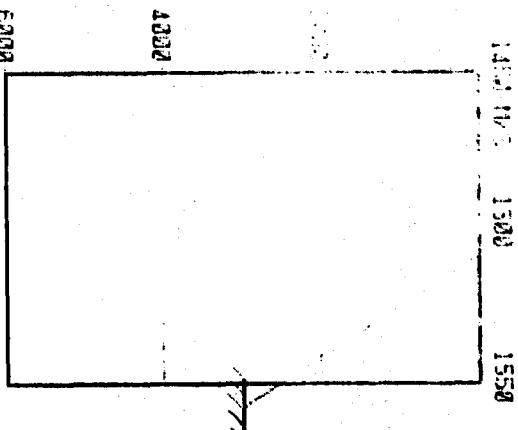
DB LOSS



NOISE (DB)



DEPTH IN METERS



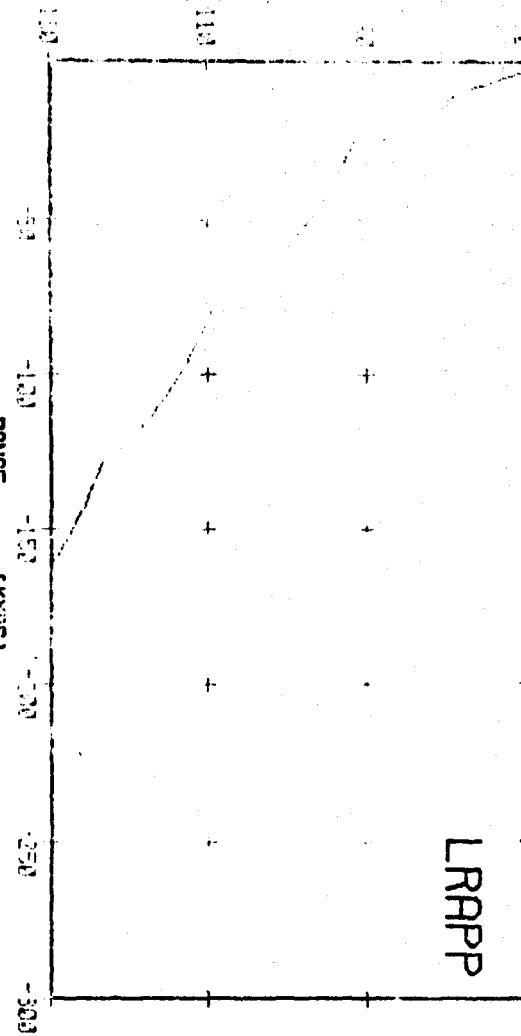
R/2R 36 WINTER

S 360 R 9842 F 1202

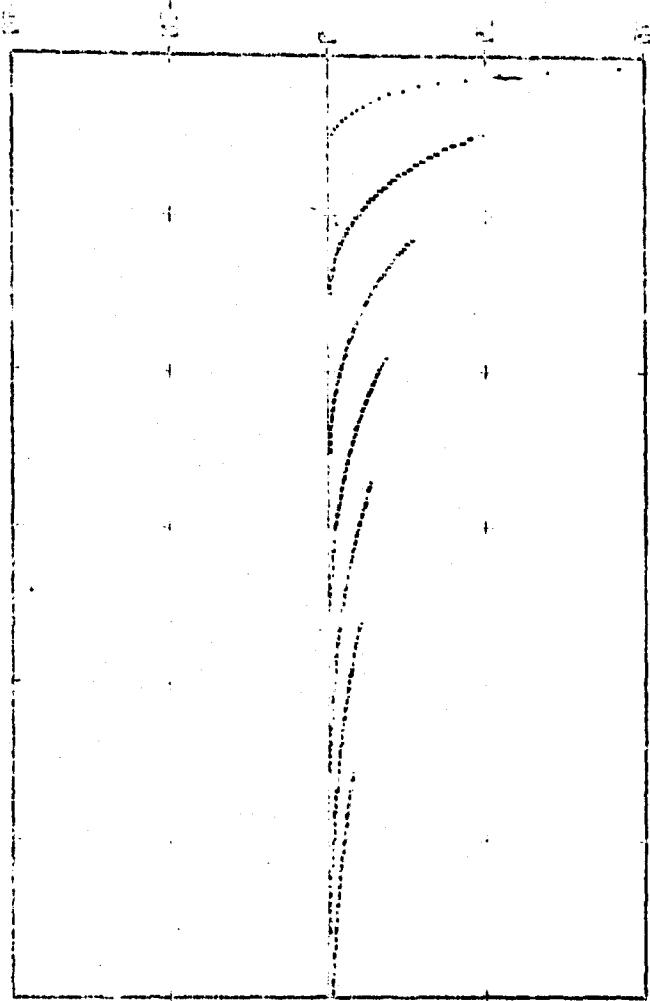
1450 H.S. 1500 1550

LRAPP

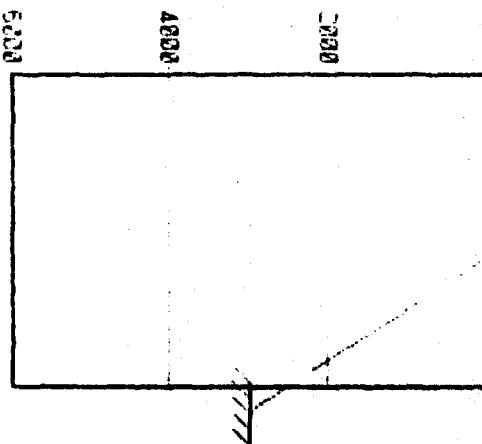
DB LOSS



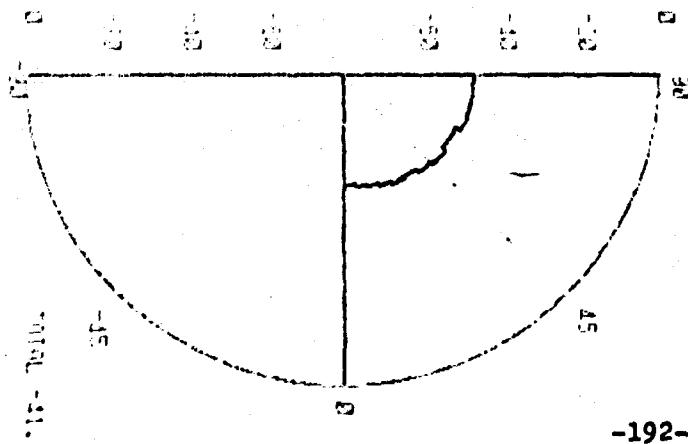
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



PA

RICK 52 JUNIOR

S 29 N 00 F 2003

140 145 1500 1550

LRGPP

DB LOSS

110 + + + + +

4000 3000 2000

130 50 100 150 200 250 300

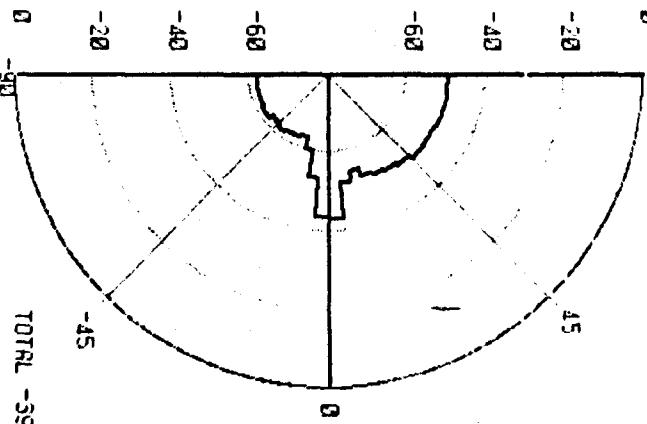
RANGE (KMS)

ARRIVAL ANGLE

-20 + + + + + + + + + +

0 1000 2000 3000 4000

NOISE (DB)



DEPTH IN METERS

4000

5000

0

30

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

TOTAL -39.7 DB

AREA 38 WINTER

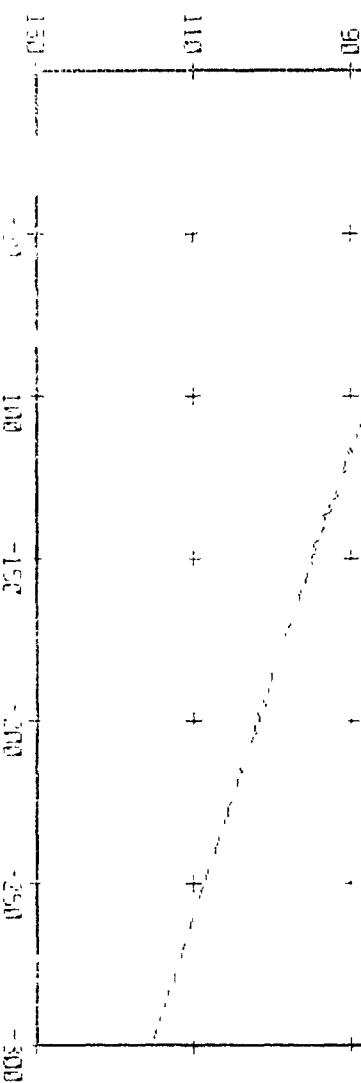
S 50 R 60 F 2000

1450 145 1500

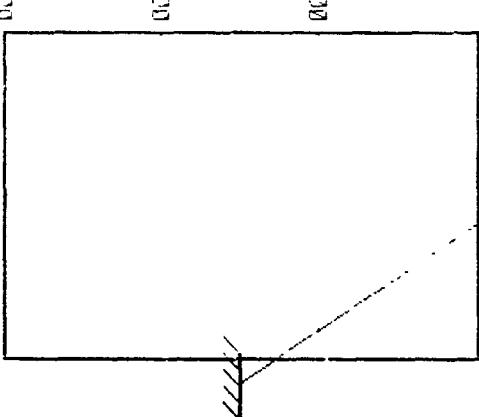
1550

LRAPP

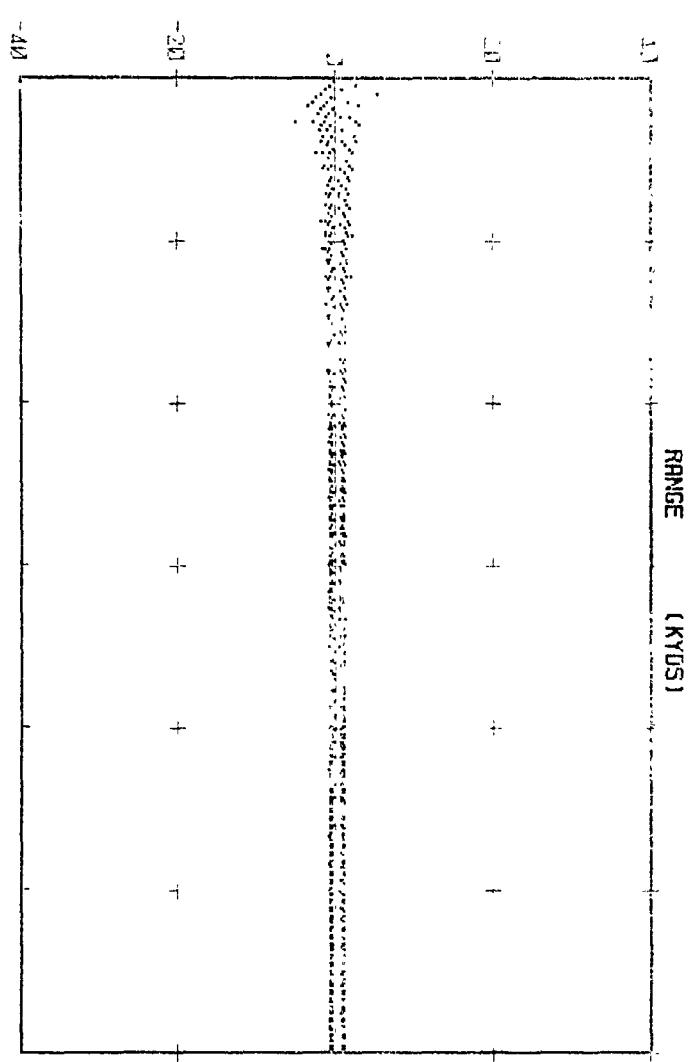
DB LOSS



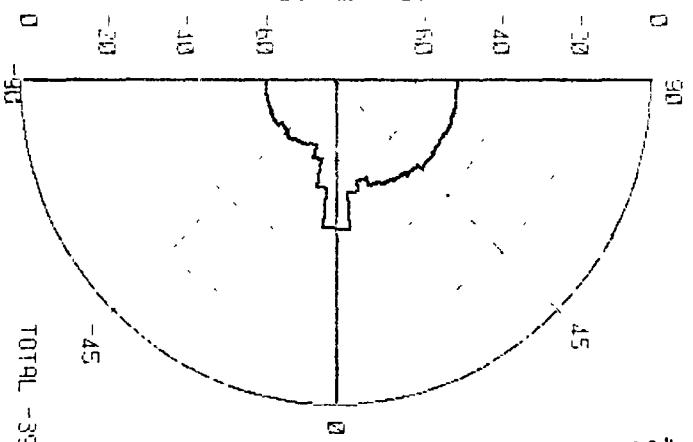
DEPTH IN METERS



NOISE (dB)



ARRIVAL ANGLE



NOISE (dB)

TOTAL - 39.7 DB

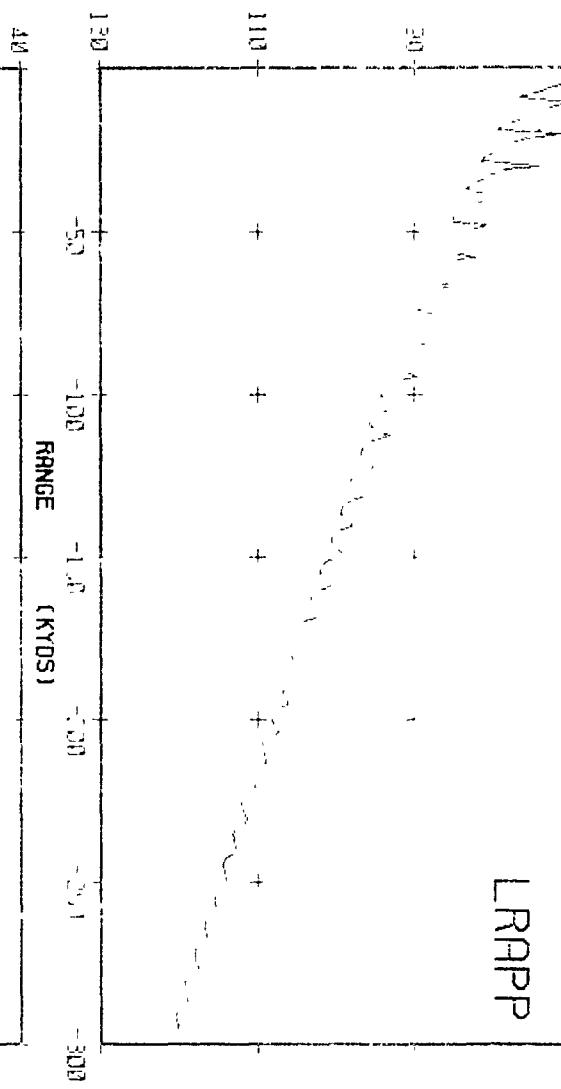
AFTER 3B WINTER

S 30° R 60° F 2000

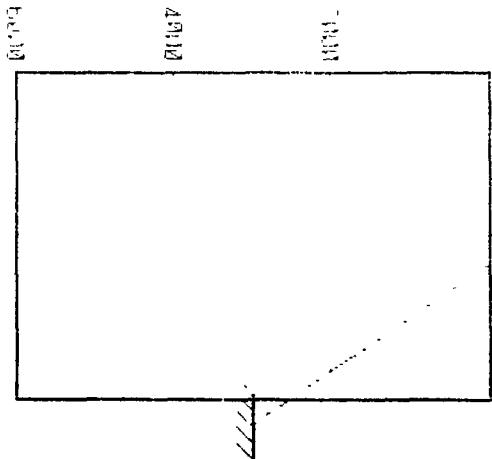
1450 11'5 1500 1550

LRAFP

DB LOSS

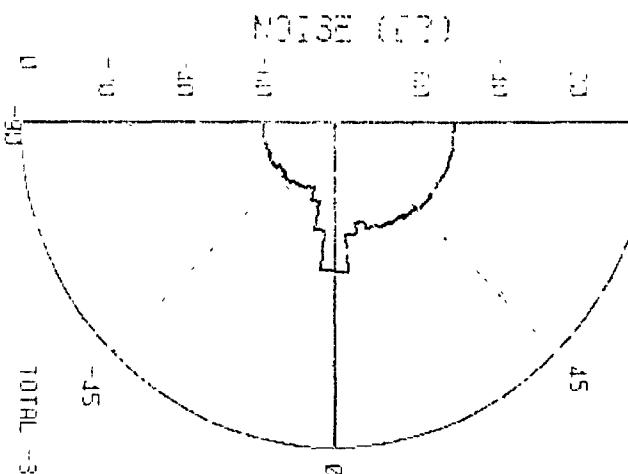
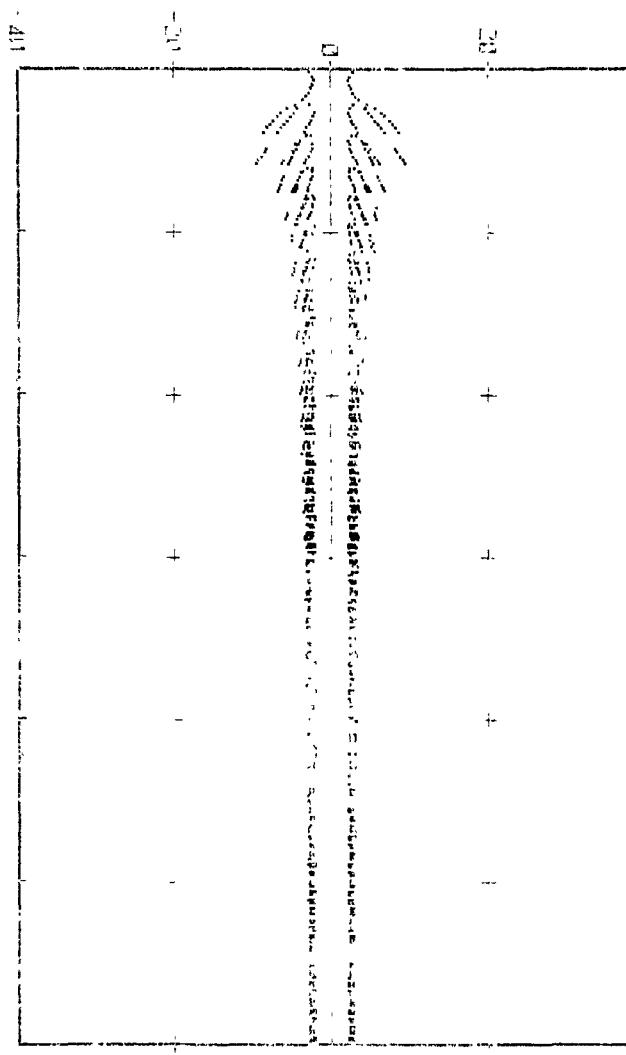


DEPTH IN METERS



-195-

ARRIVAL ANGLE



TOTAL -39.7 DB

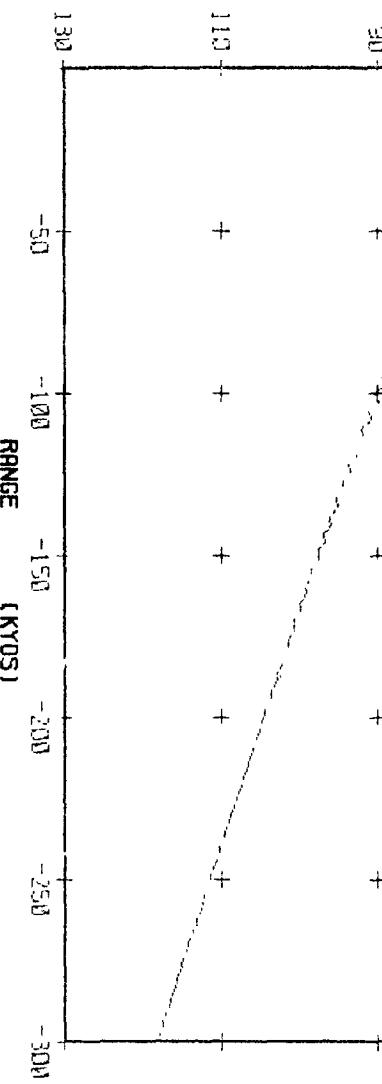
ARRER 3B WINTER

S 20 R 100 F 2000

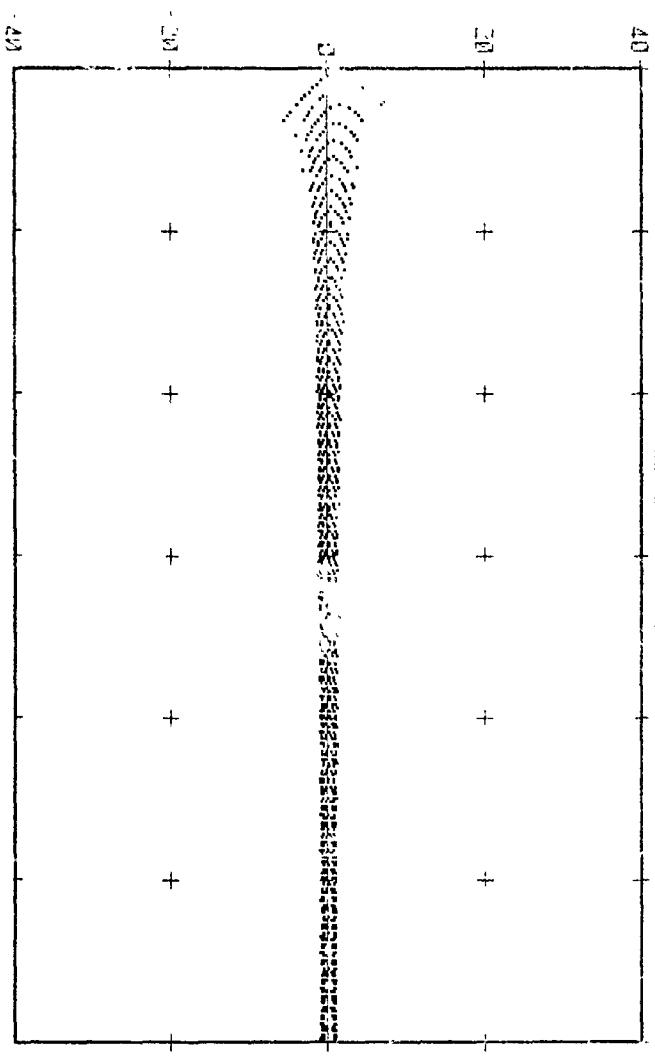
14°.0 11/5 1500 15°.0

LRHAPP

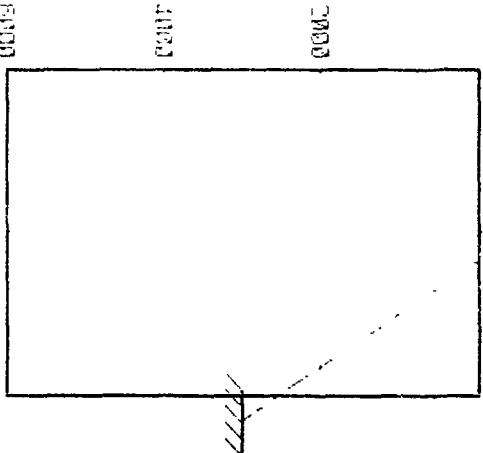
DB LOSS



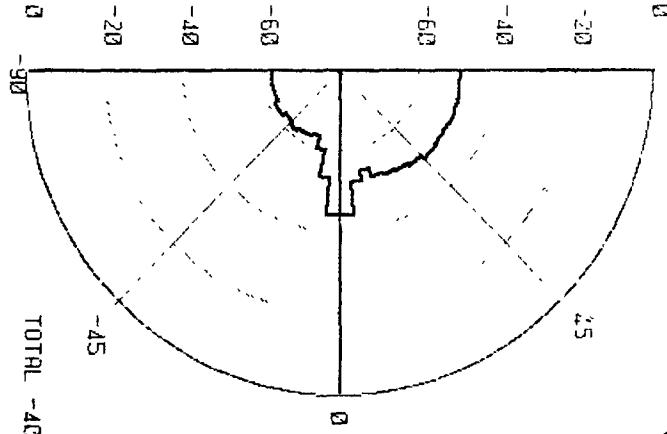
ARRIVAL ANGLE



DEPTH IN METERS

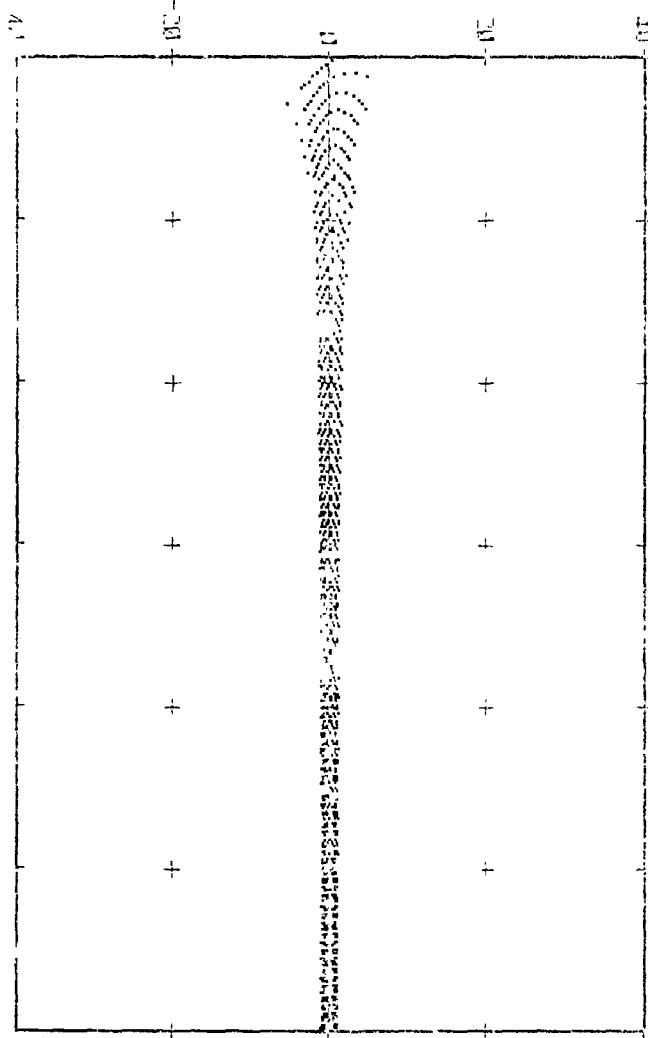


NOISE (DB)

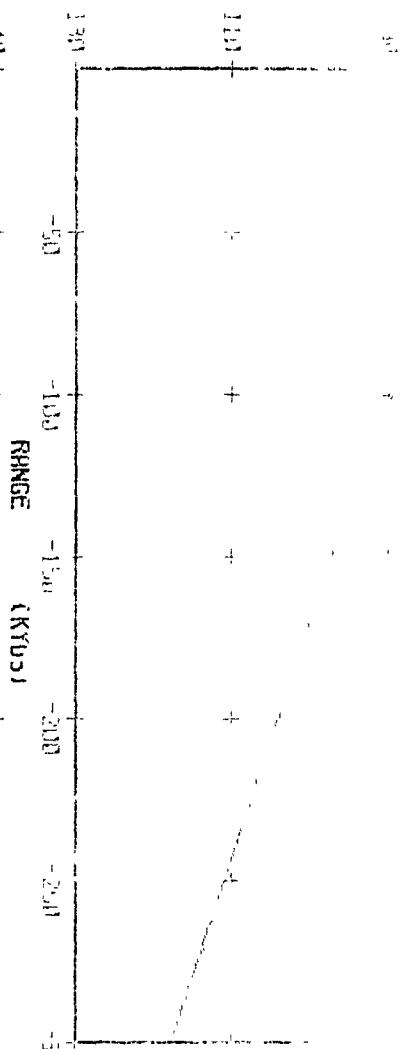


TOTAL -40.2 DB

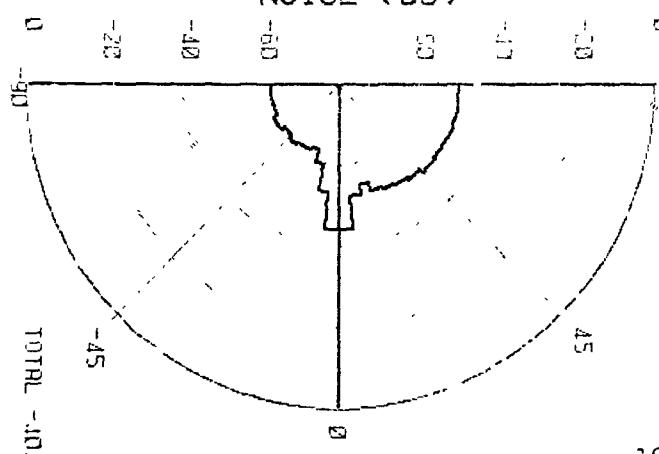
ARRIVAL ANGLE



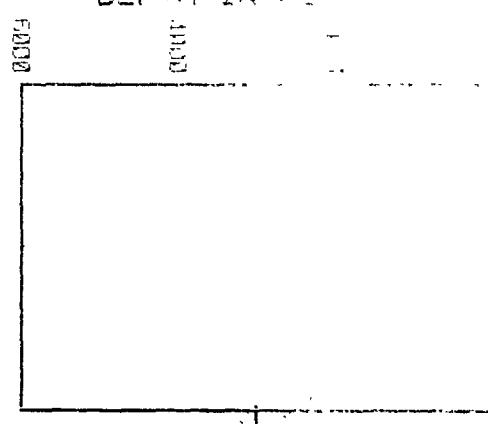
DB LOSS



NOISE (DB)



DEPTH IN FEET



TOTAL -40.2 Db

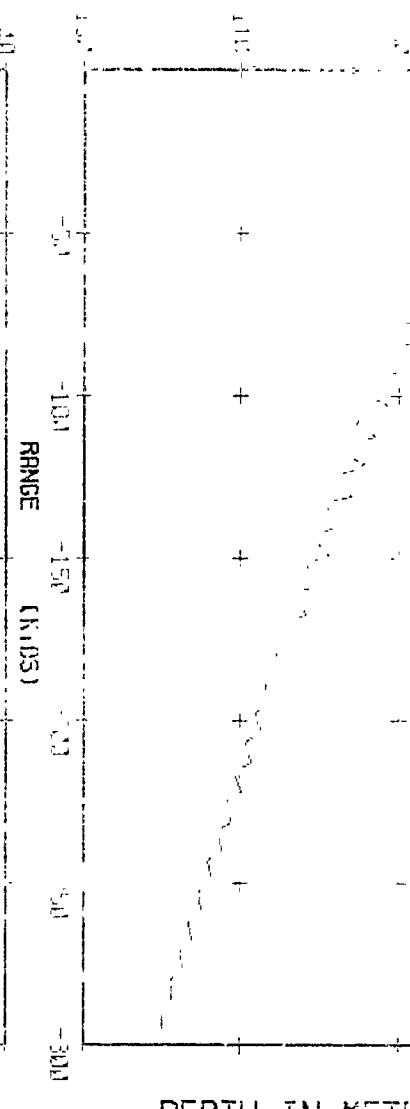
RIG 35 WINTER

S 36° R 16° F 2023

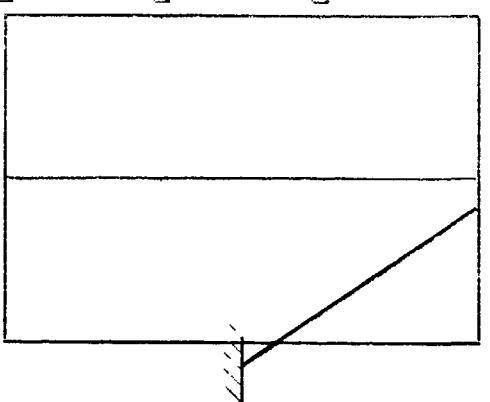
1450 11.5 1500 1550

LRAAPP

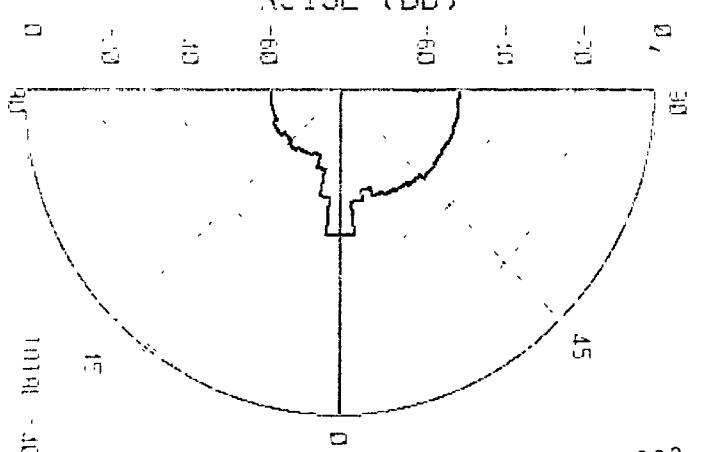
DB -105.3



DEPTH IN METERS



NOISE (DB)



1400 1450 1500 1550
S 25 R 30 J F 2003

L13(47)

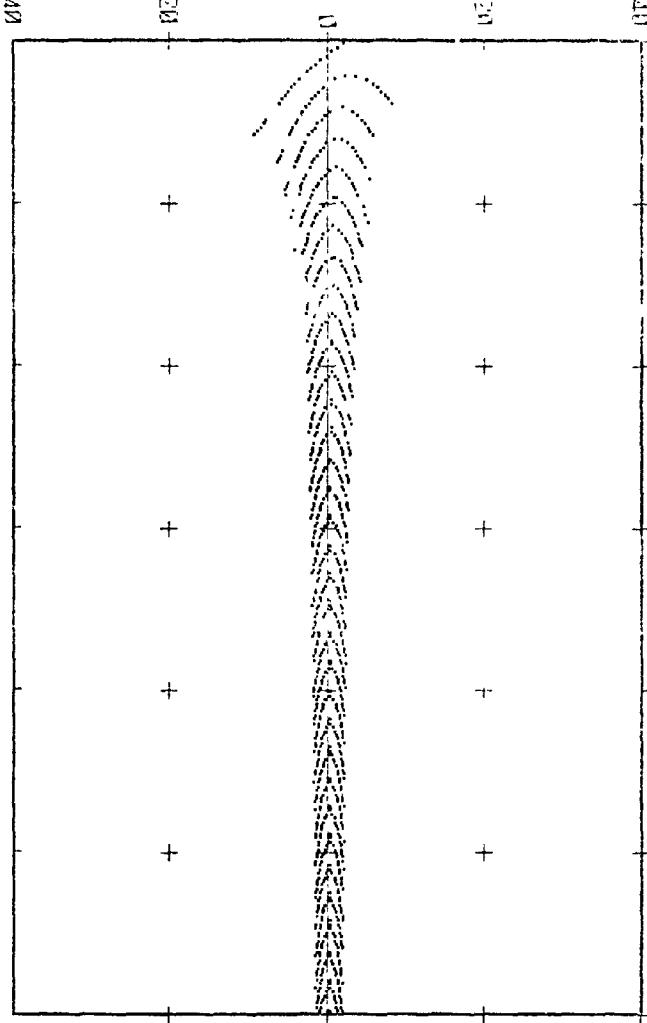
DB LOG

150 +
110 +
40 +
-50 -100 -150 -200 -250 -300

RANGE (KTS)

ARRIVAL ANGLE

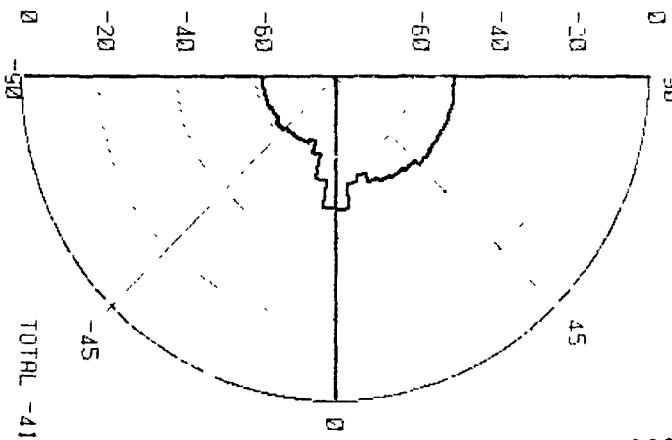
AD



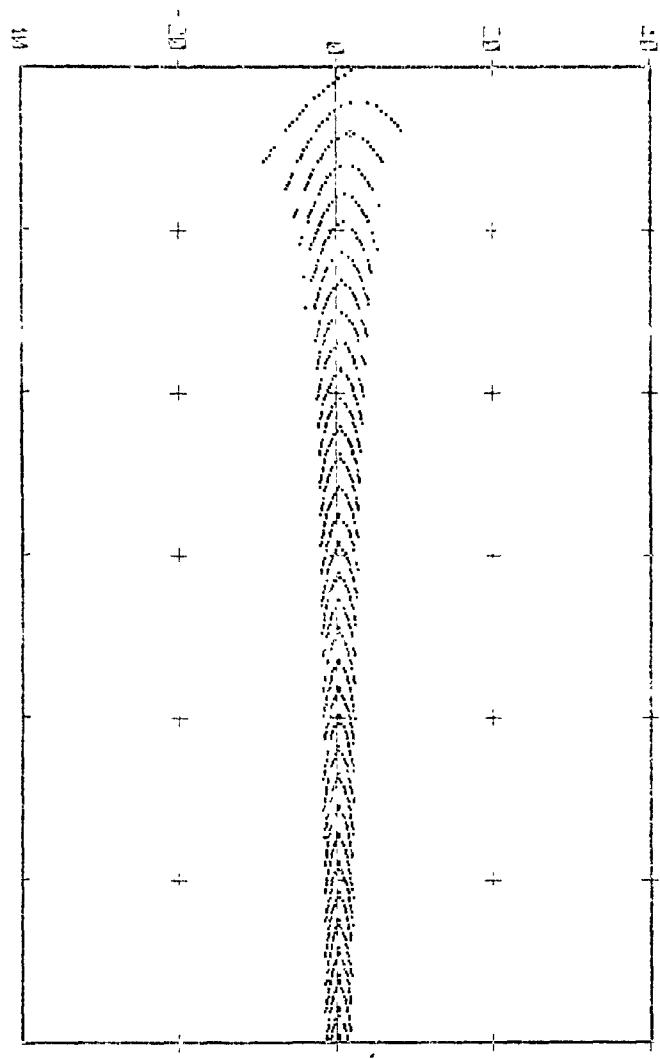
DEPTH IN METERS

5000
4000
3000
2000
1000
0

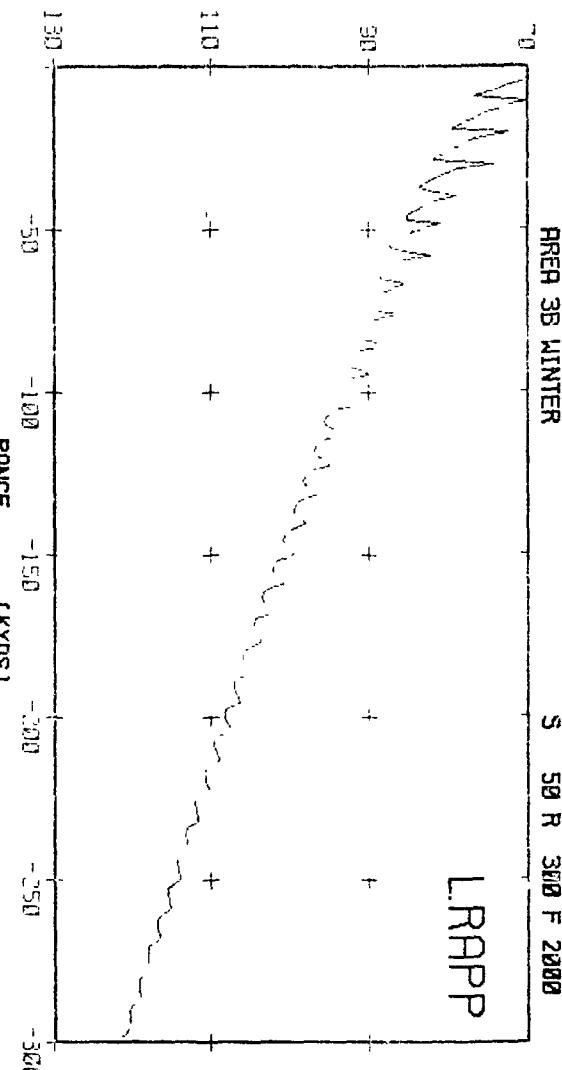
NOISE (DB)



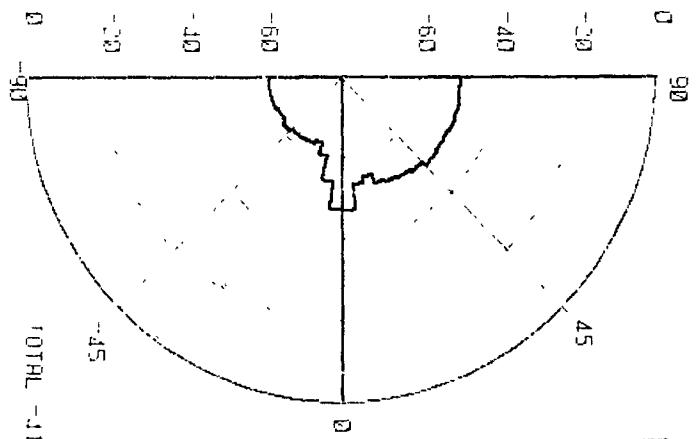
ARRIVAL ANGLE



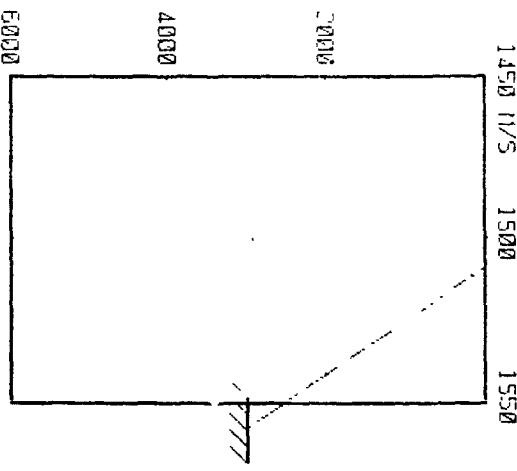
DB LOSS



NOISE (DB)



DEPTH IN METERS



4b

TOTAL - 41.5 dB

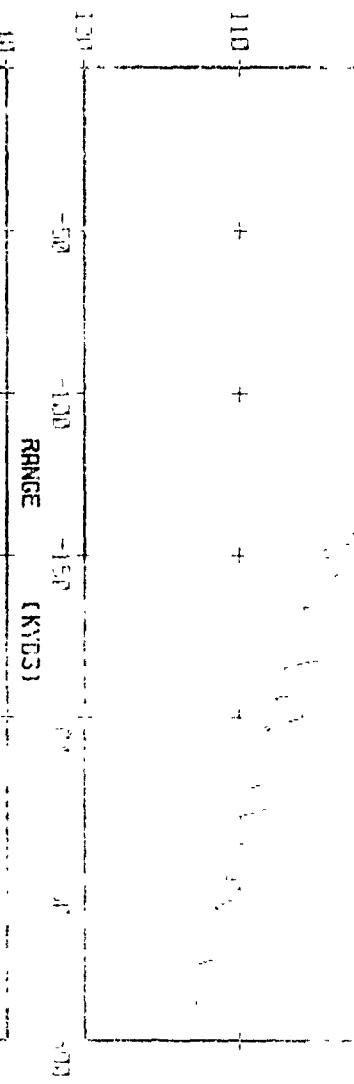
TEST NO. 1444
S 3.3 R 2.0 P 2.5

1444 H 2 154P

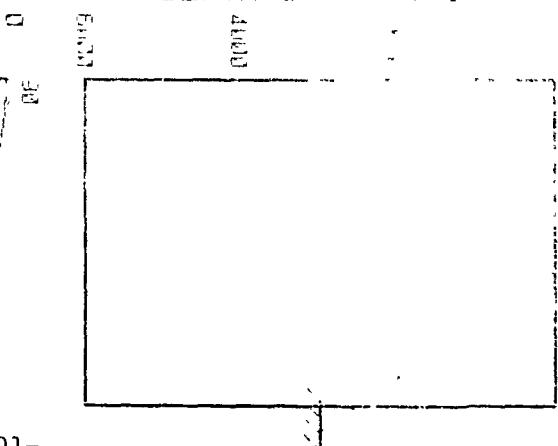
1444 H 2 155P

1444 SP2

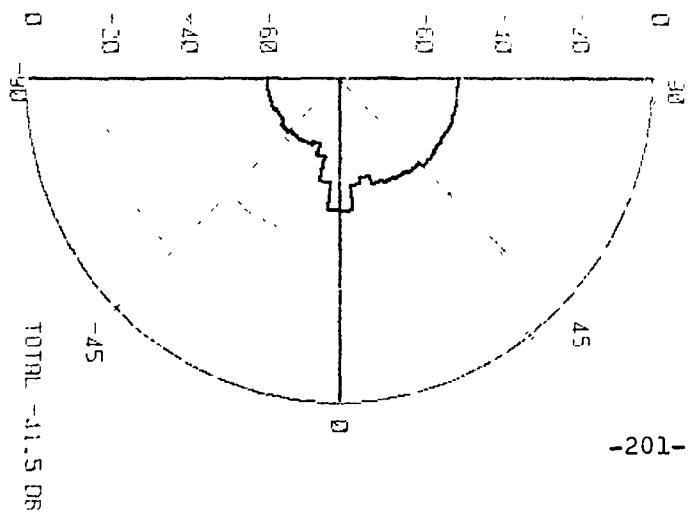
DB LOSS



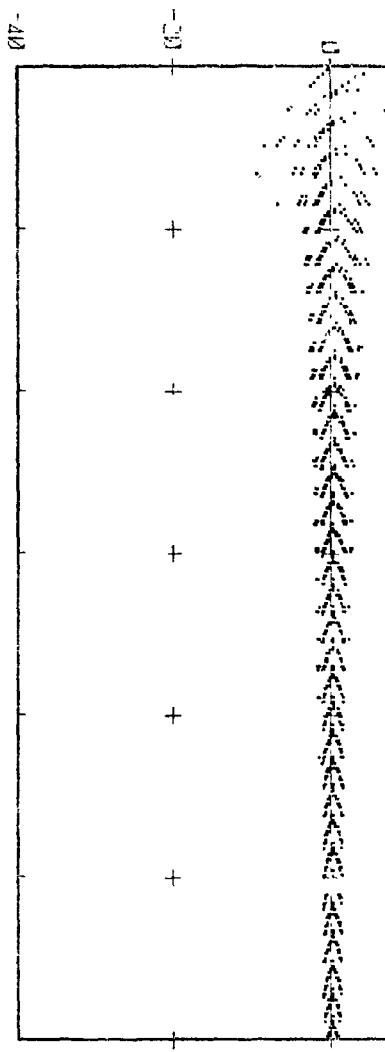
DEPTH IN FEET



NOISE (DB)



ARRIVAL ANGLE



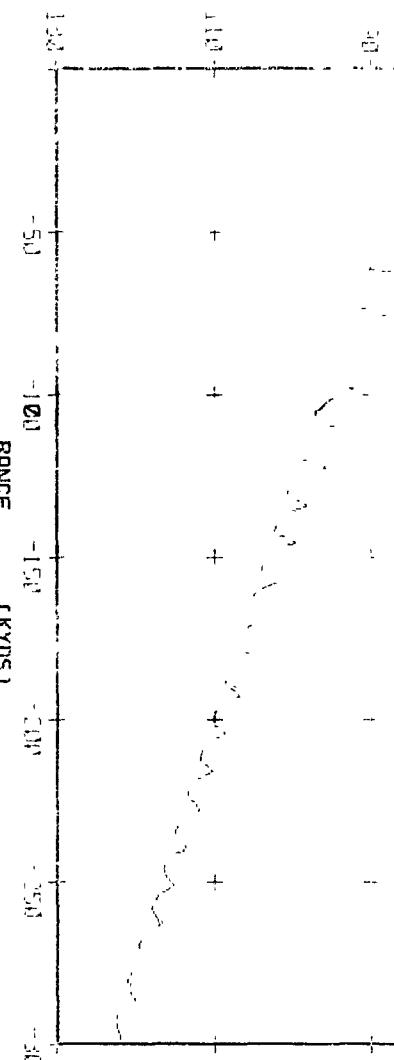
RIVER 33 WINTER

3 22 R 500 F 2000

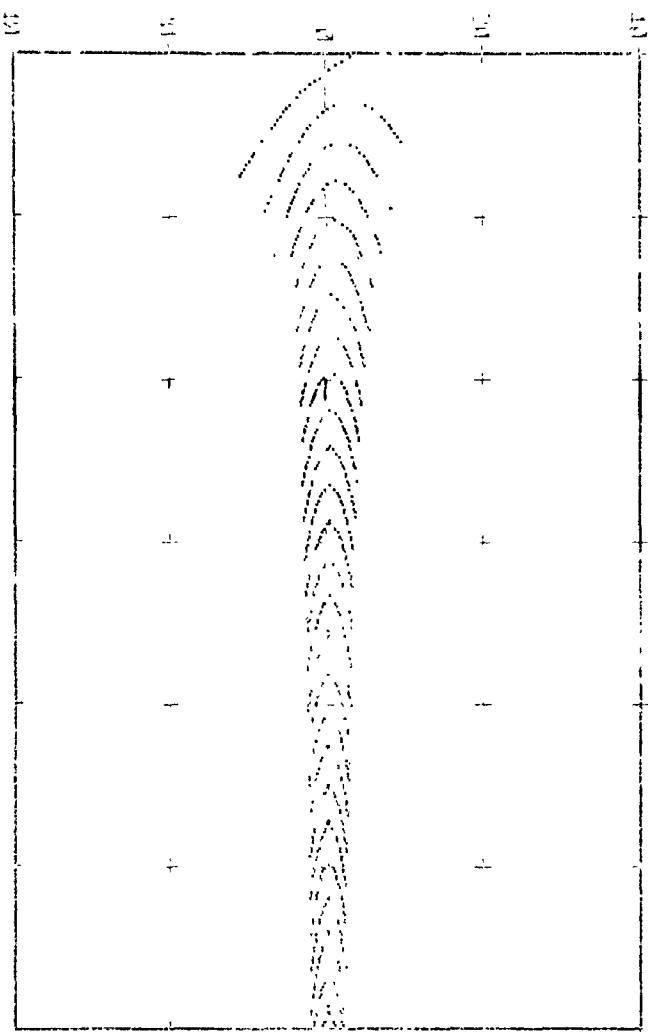
1450 1455 1500 1550

L RAPP

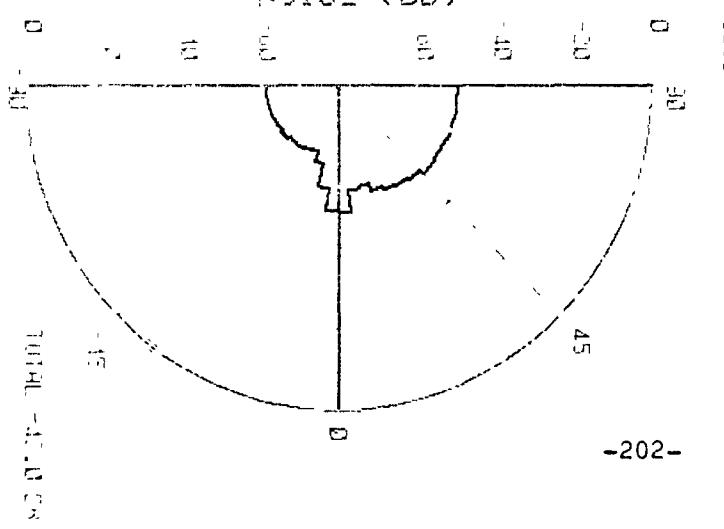
DB LOSS



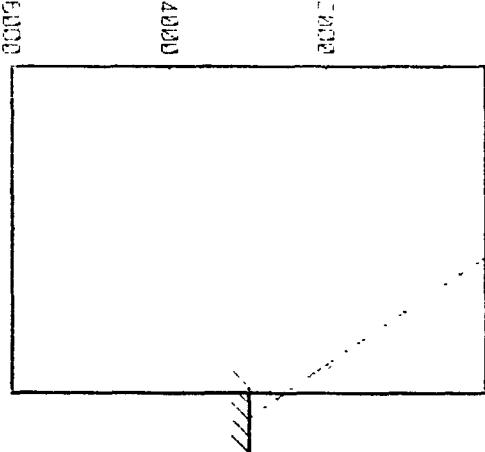
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



11

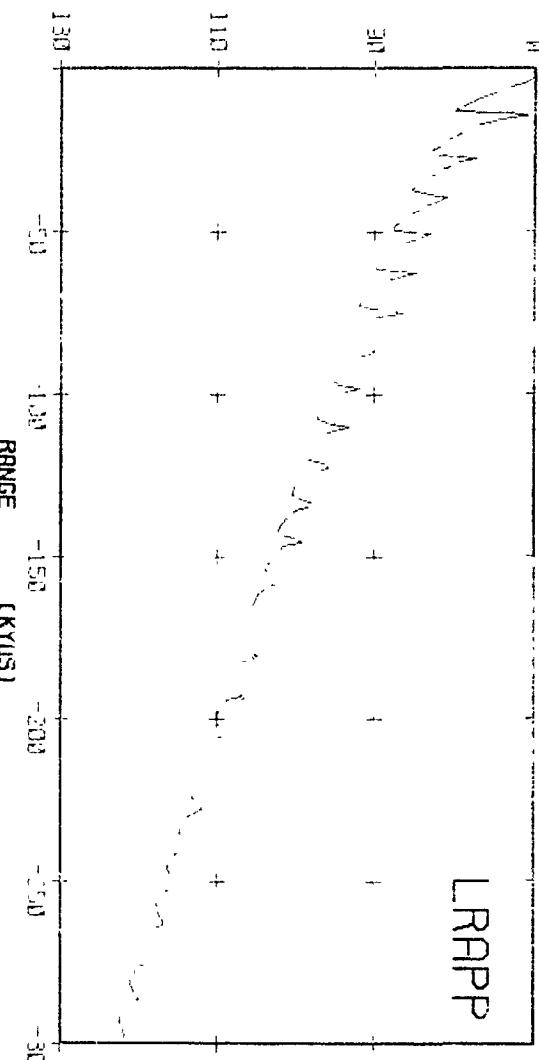
AREA 38 WINTER

S 50 R 56 F 2000

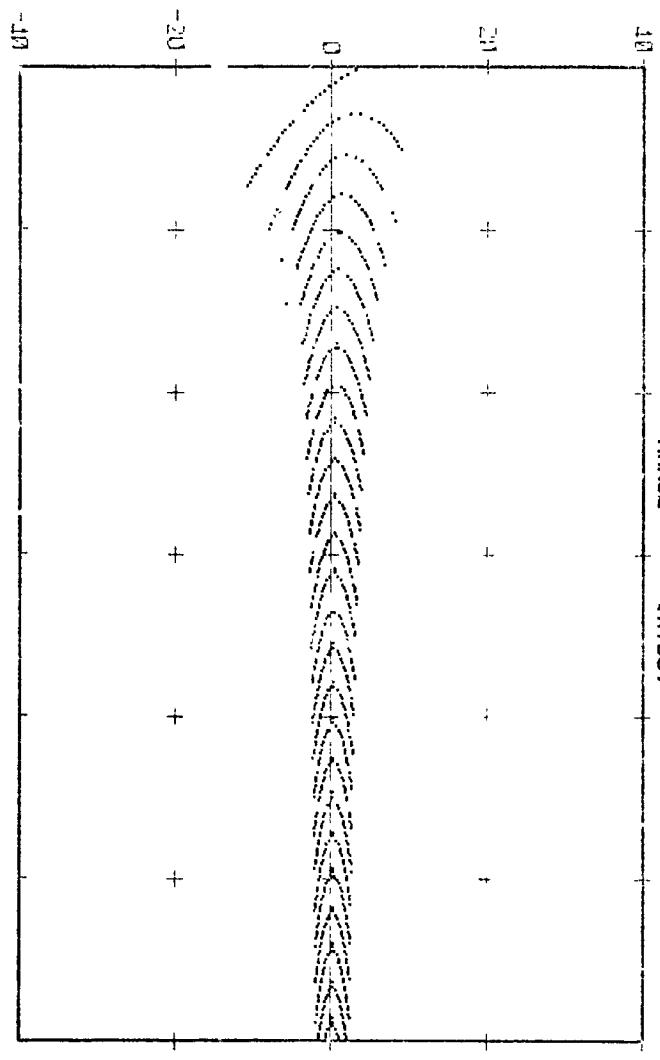
1450 145 1500 1550

LRAFP

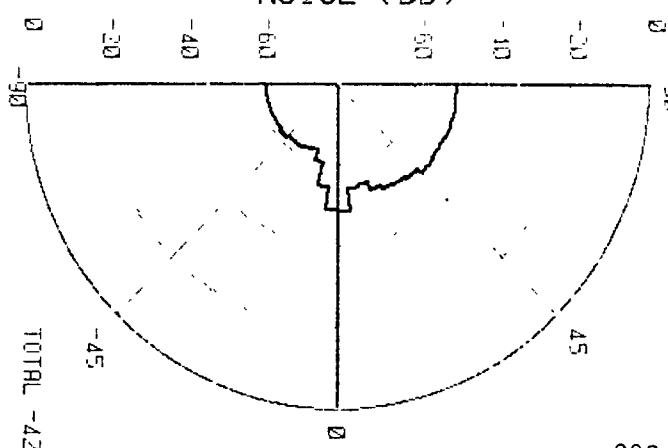
DB LOSS



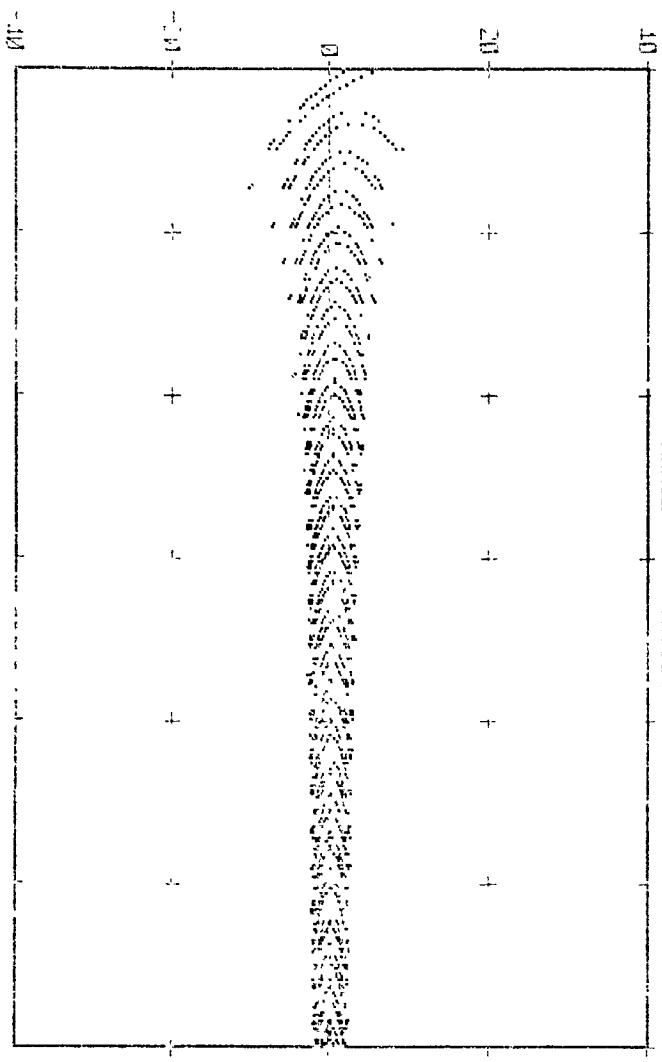
ARRIVAL ANGLE



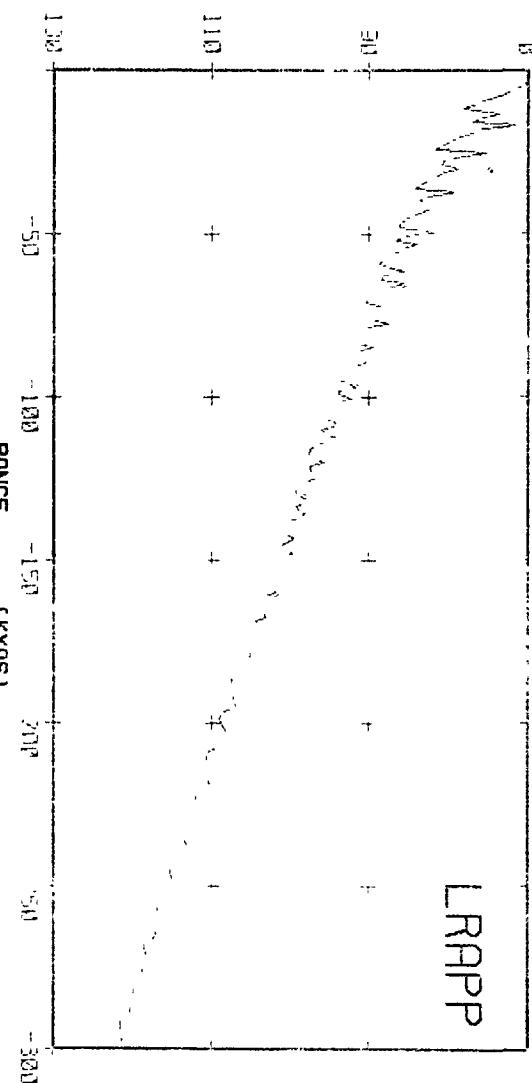
NOISE (DS)



ARRIVAL ANGLE



DB LOSS

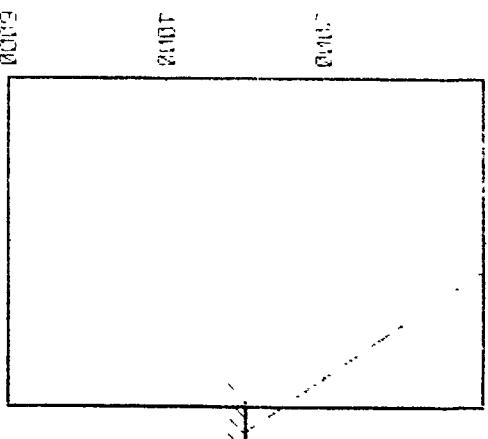


AKER 3B WINTER S 300 R 500 F 2000

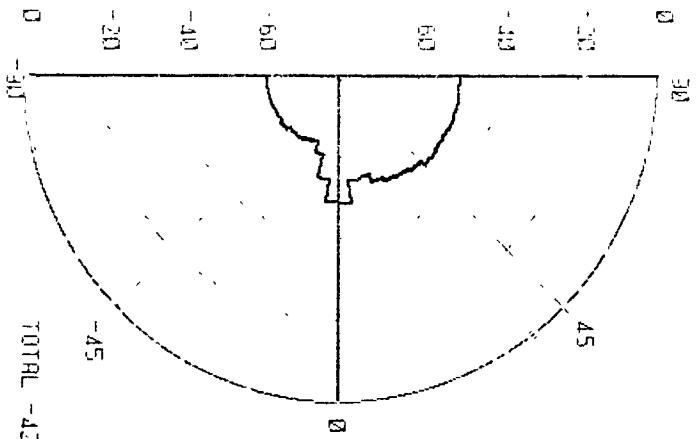
1450 1450 1500 1550

LRAAPP

DEPTH IN METERS



NOISE (DB)



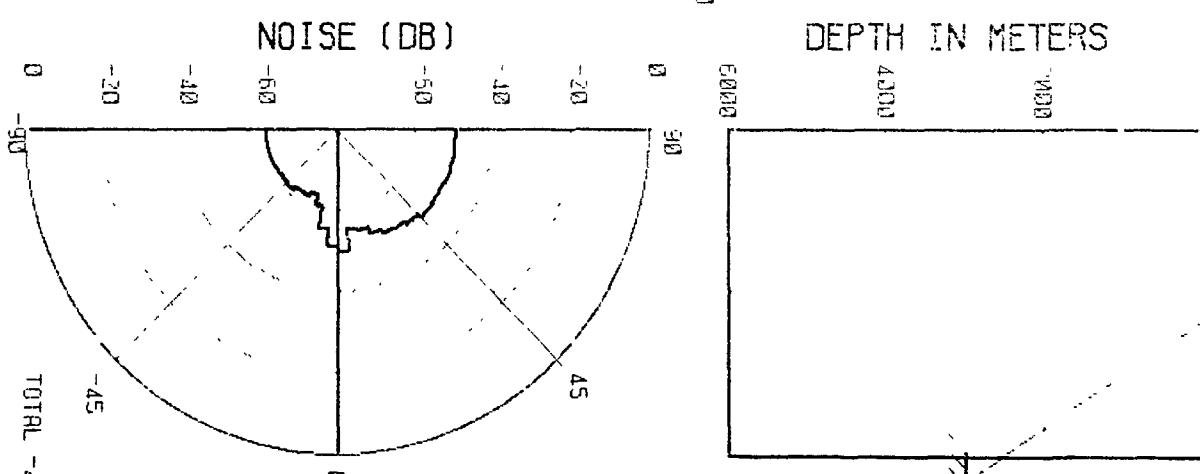
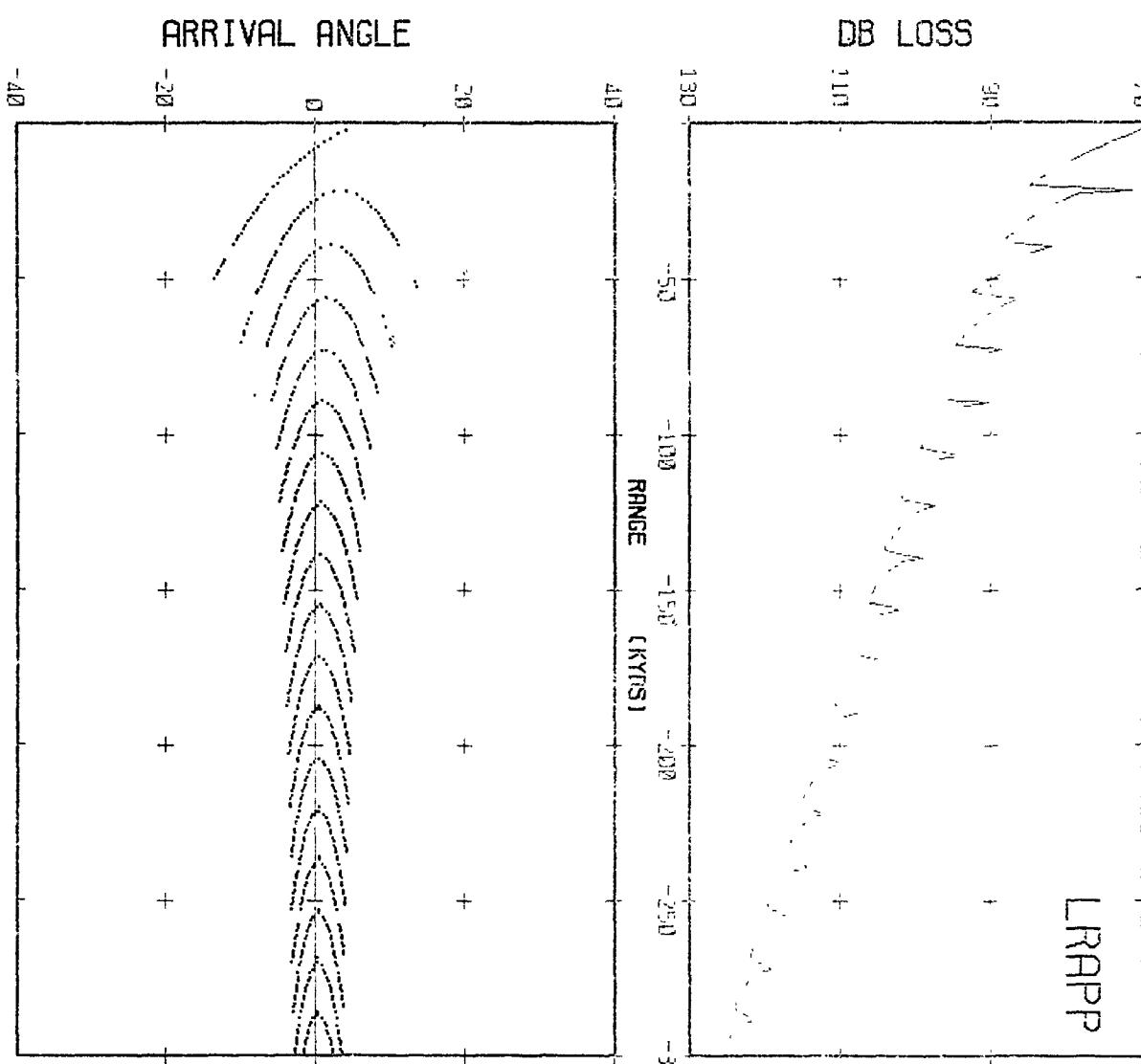
TOTAL -42.0 dB

1

FIFER 33 MINIER

S 29 R 1683 F 2683

14,9 11,5 15,0 15,0



AREA 3B WINTER

9 53 R 1000 F 2038

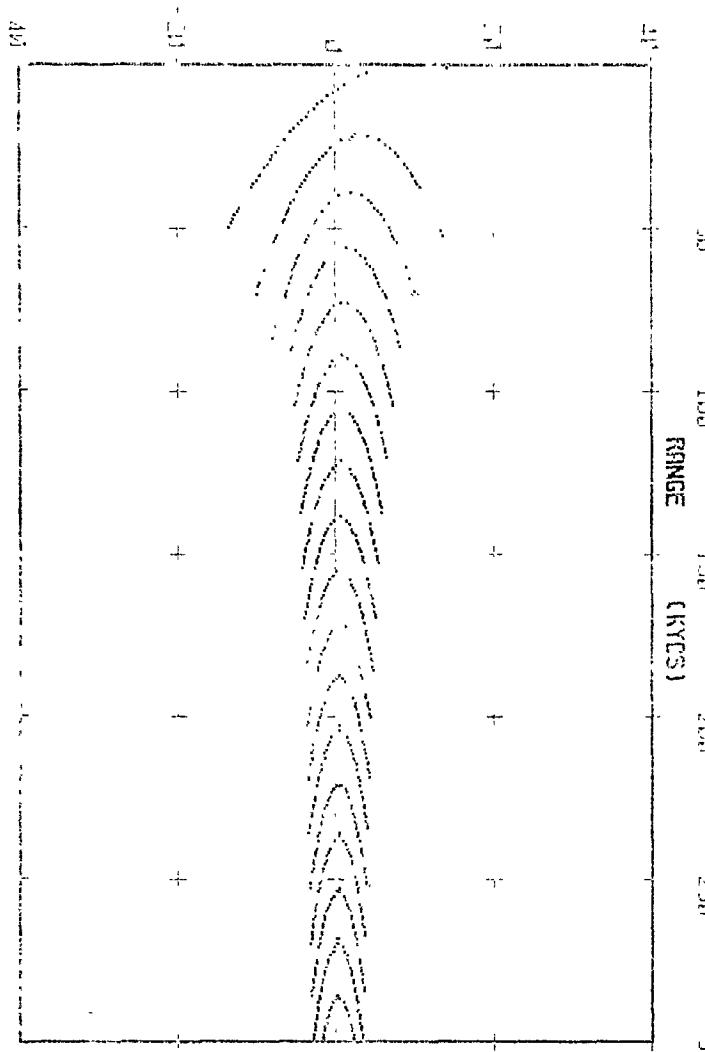
1450 11/5 1500 1550

LRRPP

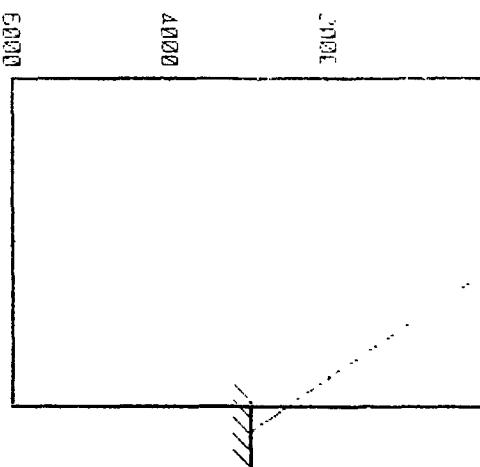
DB LOSS



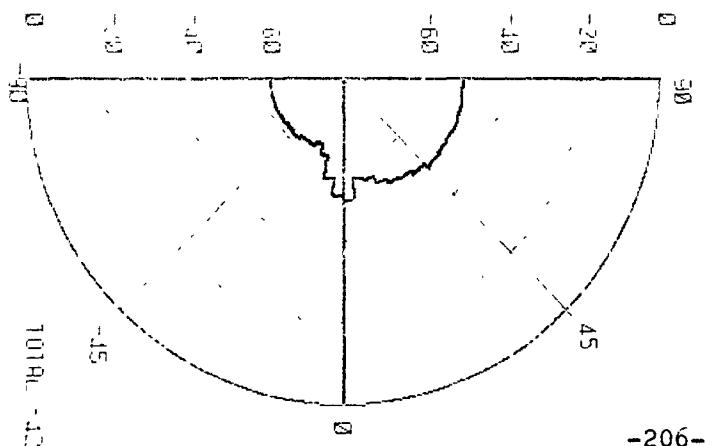
ARRIVAL ANGLE



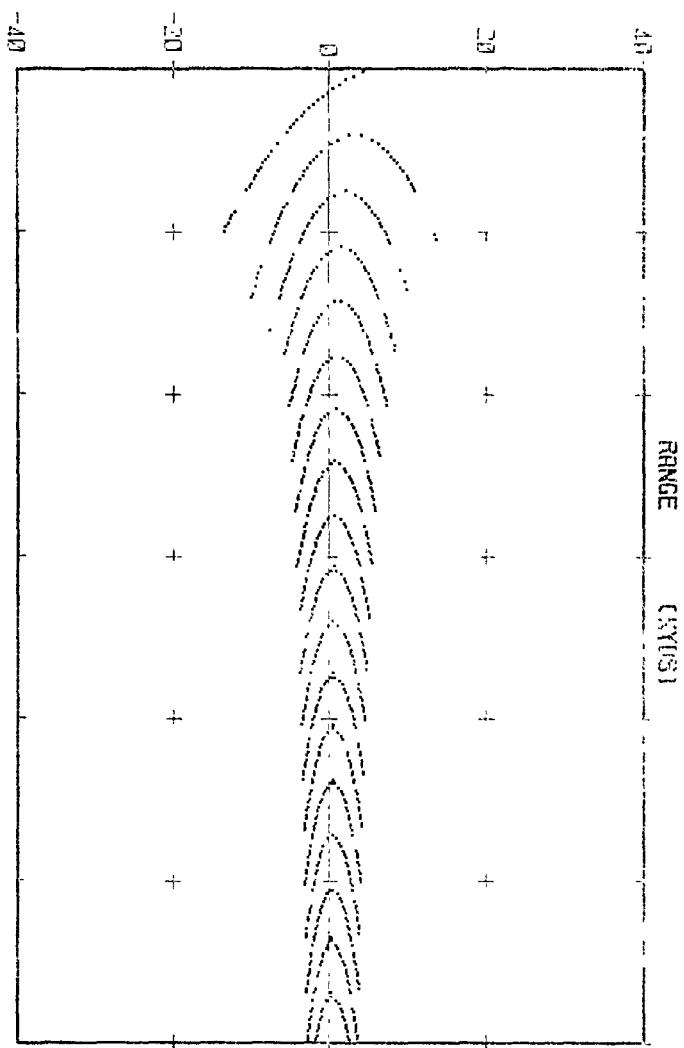
DEPTH IN METERS



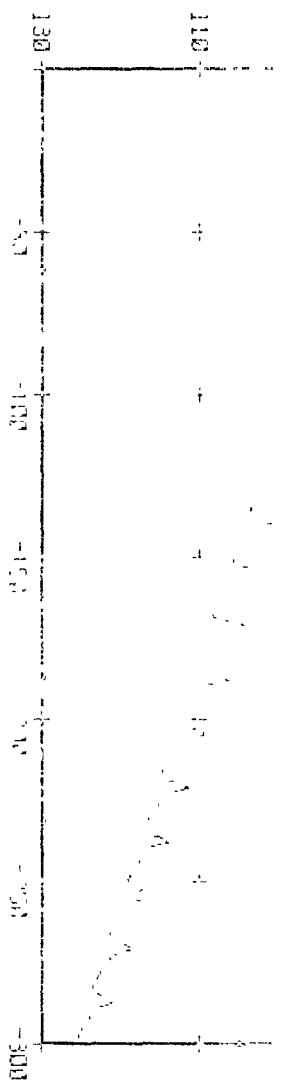
NOISE (DB)



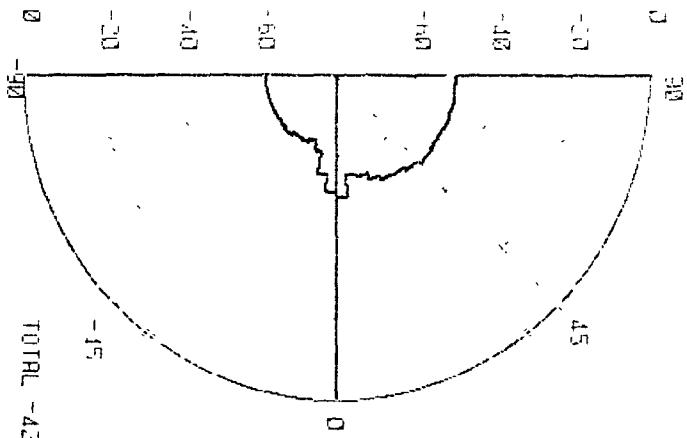
ARRIVAL ANGLE



DB LOSS

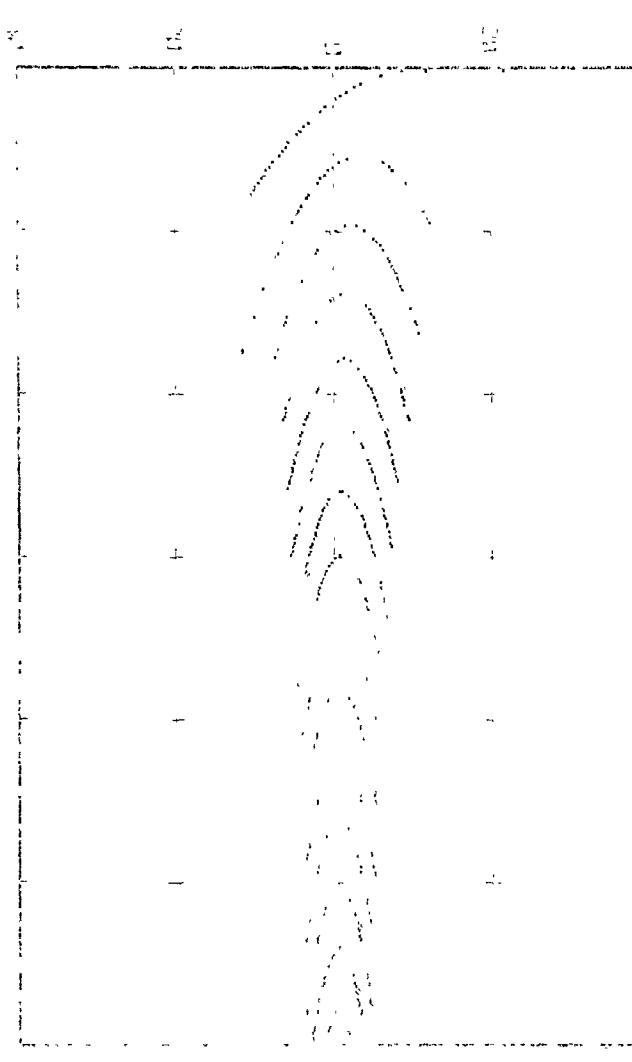


NOISE (DB)

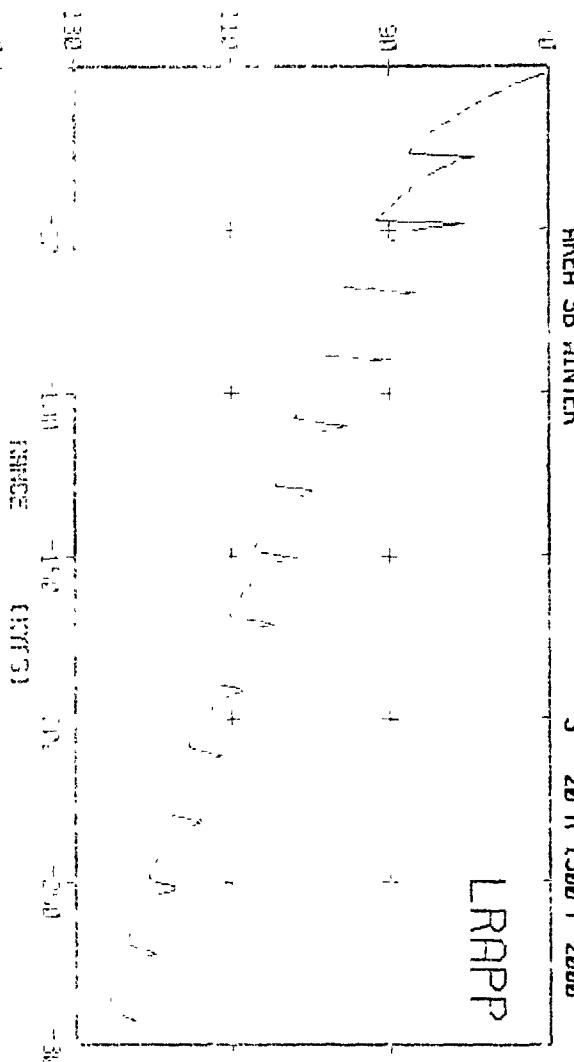


DSP HT
4200

ARRIVAL ANGLE



DB LOSS



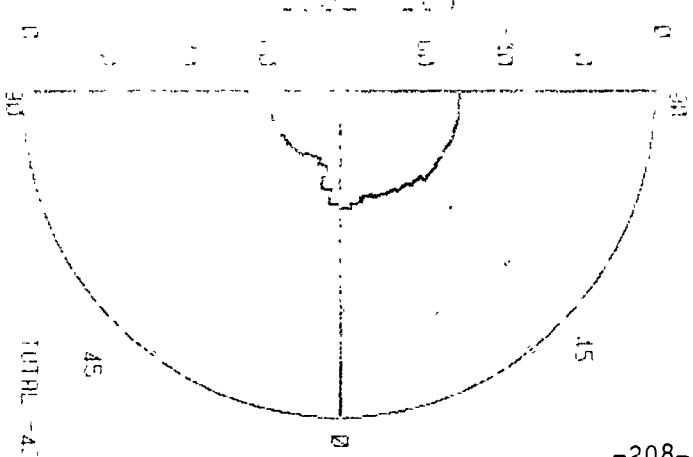
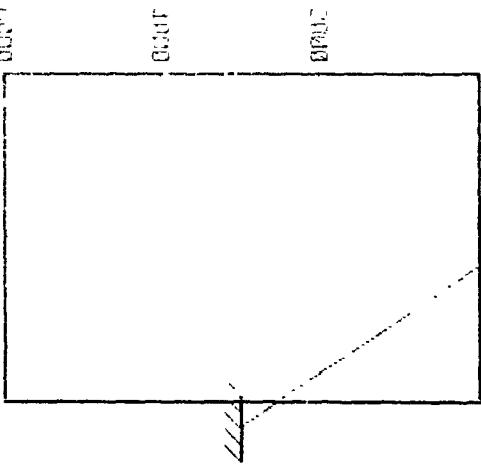
ARR 3B WINTER

S 20 R 1500 F 2000

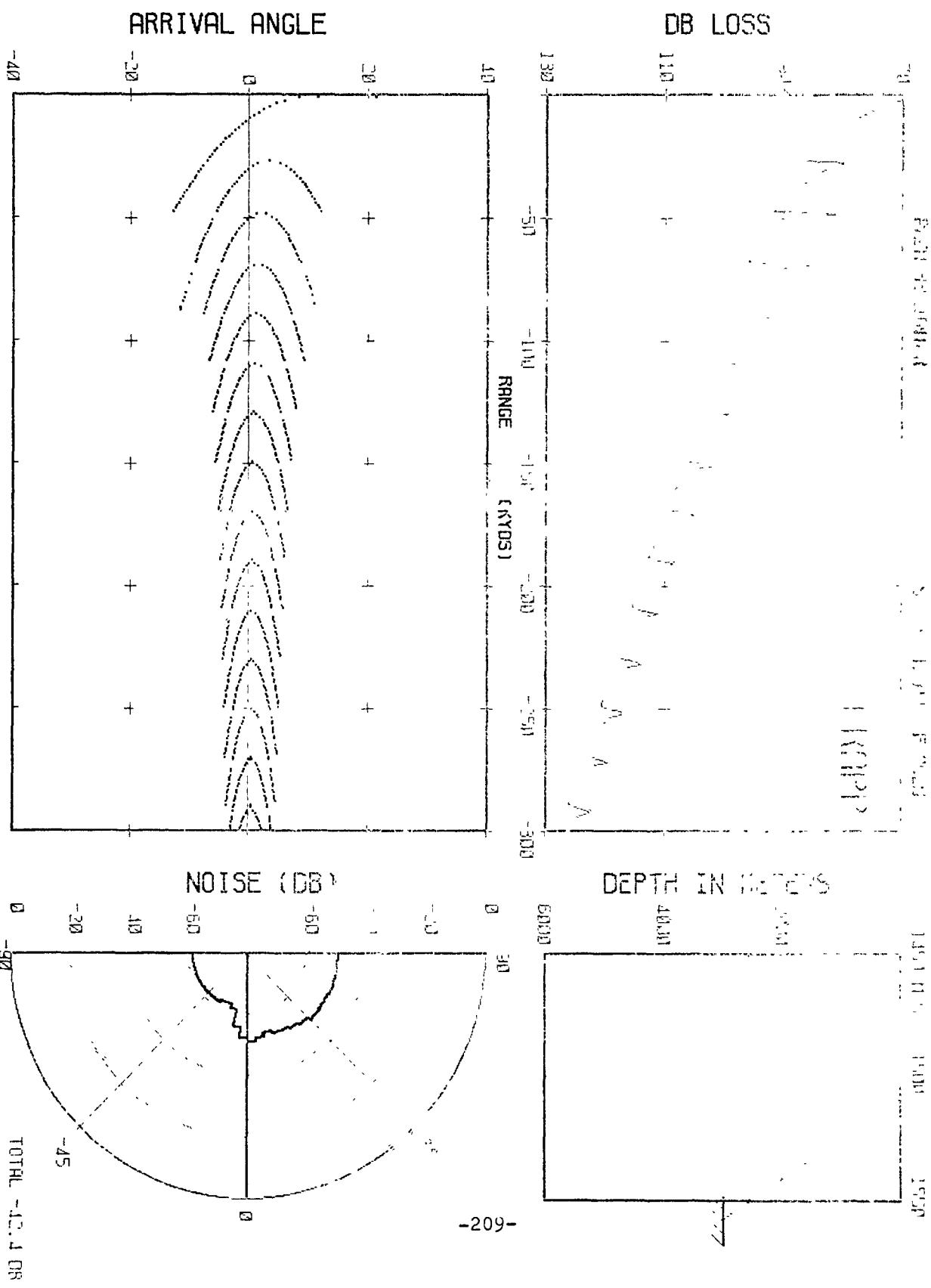
1450 M/S 1500 1550

LRAFP

DEPTH IN METERS



INITL - 4.3 LBS

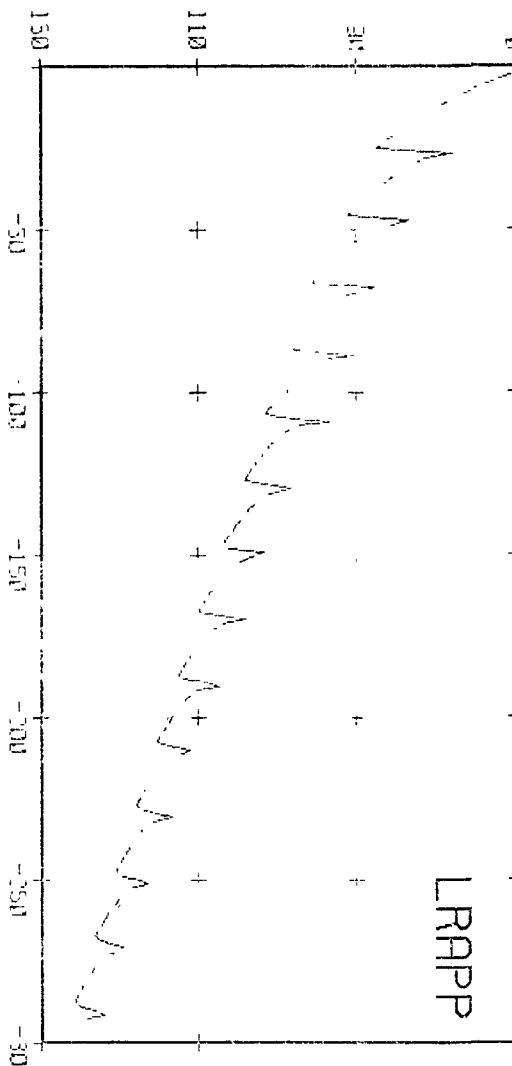


AREA 3B WINTER S 300 R 1500 F 2000

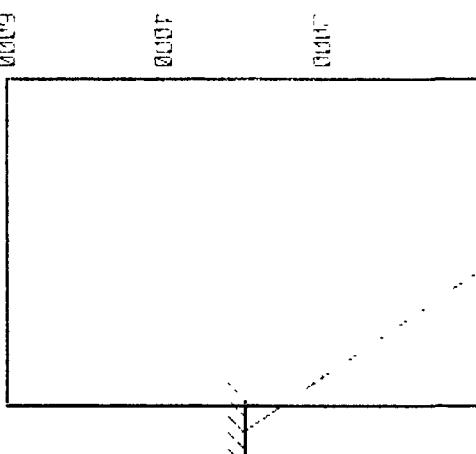
1450 1475 1500 1525

LRRAPP

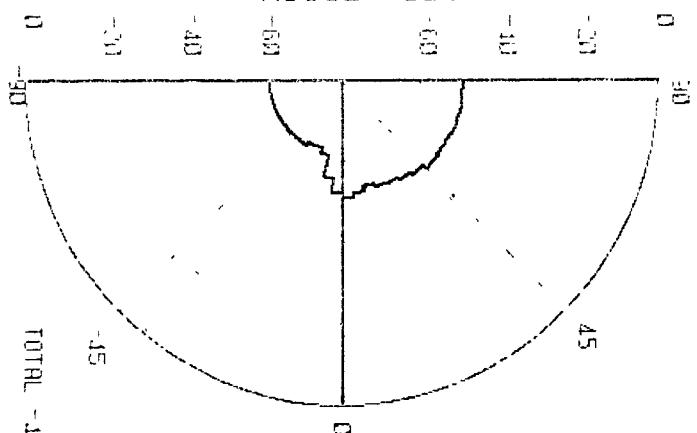
DB LOSS



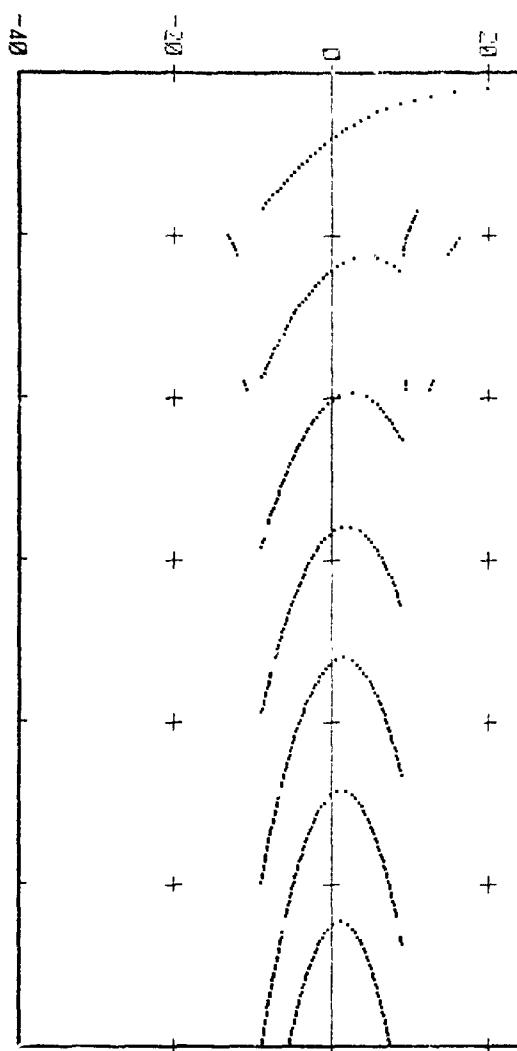
DEPTH IN METERS



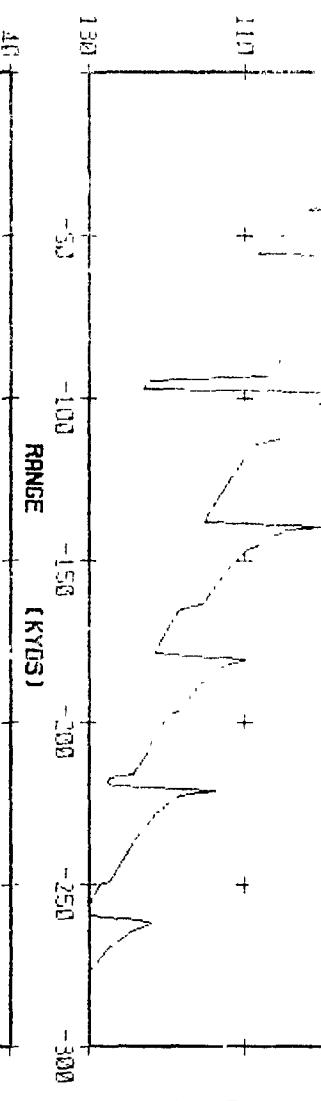
NOISE (DB)



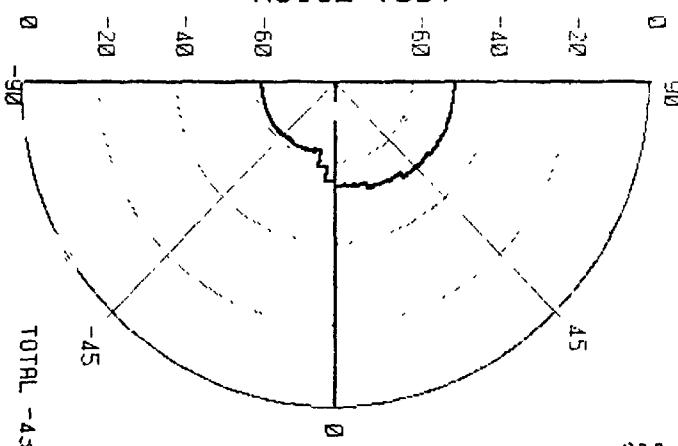
ARRIVAL ANGLE



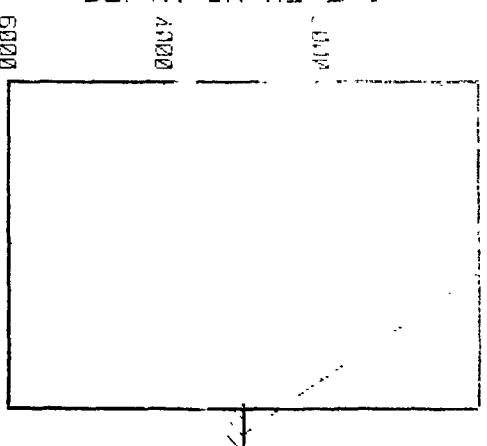
DB LOSS



NOISE (DB)



DEPTH IN METERS



TOTAL -43.1 DB

REF ID: A61104 S 50 R 6000 F 2000

1450 1475 1500 1525

LRAPP

DG LOSS

140
130
120
110
100
90
80
70
60
50
40

-100 -150 -200 -250 -300

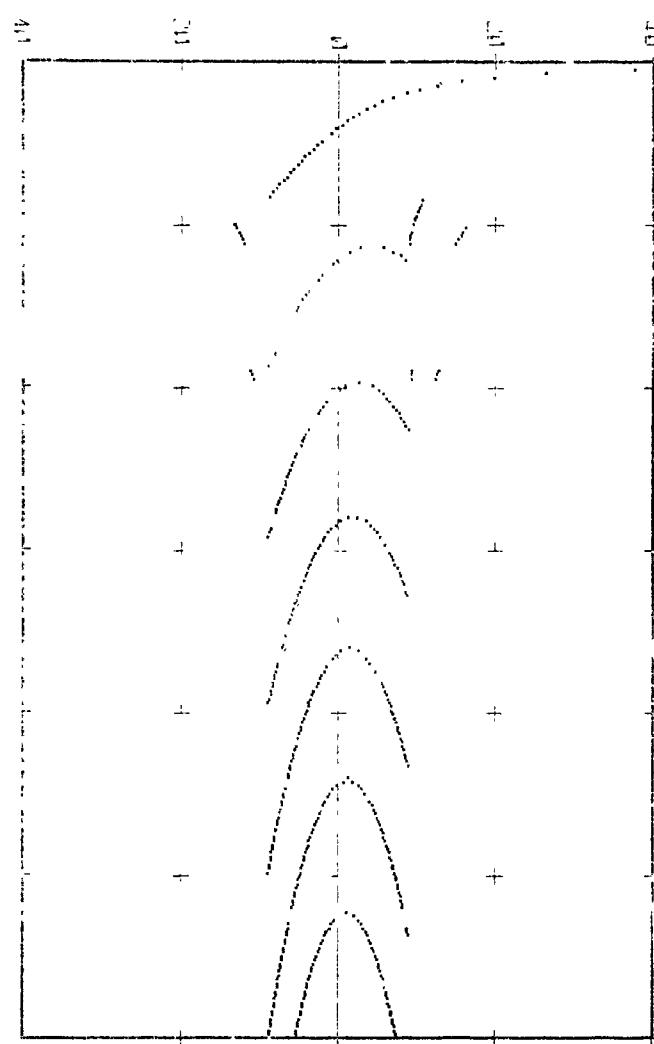
RANGE (KYDS)

DEPTH IN METERS

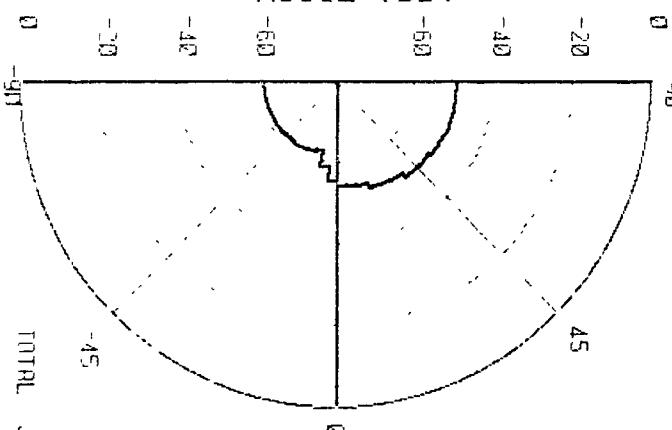
6000
4000
2000
0

1000

ARRIVAL ANGLE



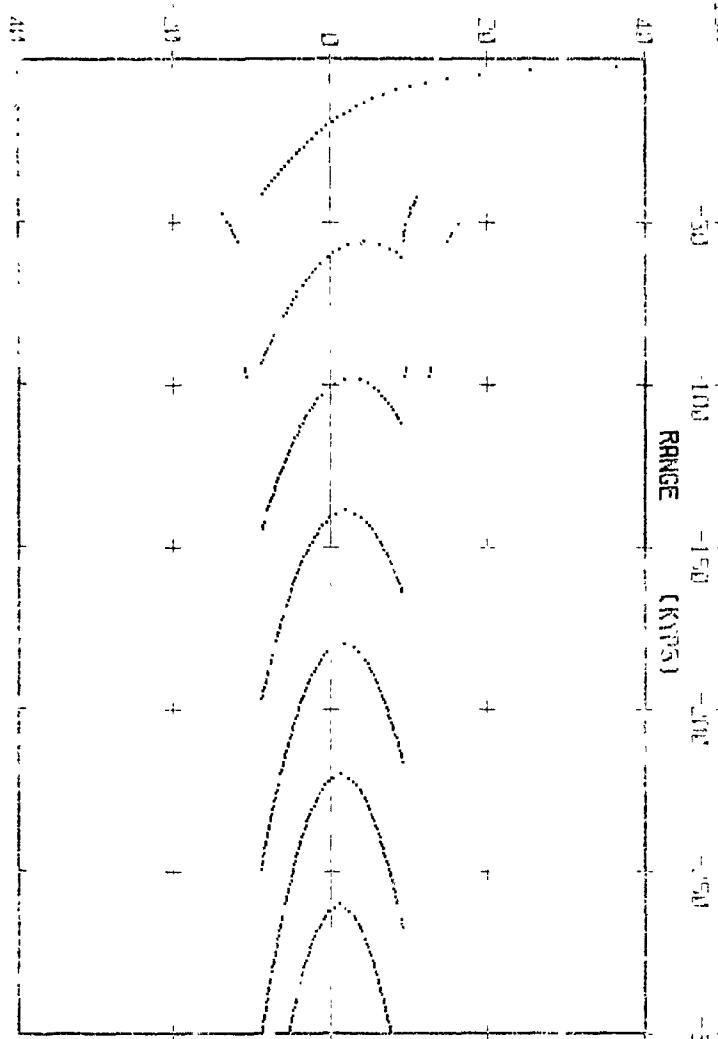
NOISE (DB)



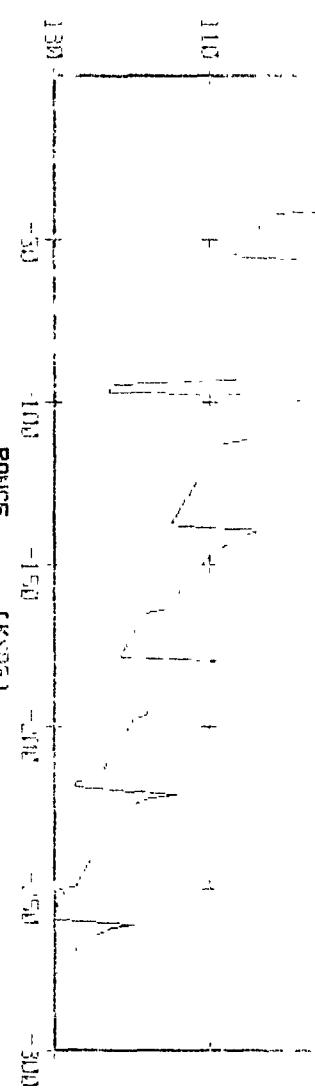
-212-

TOTAL 43.1 DB

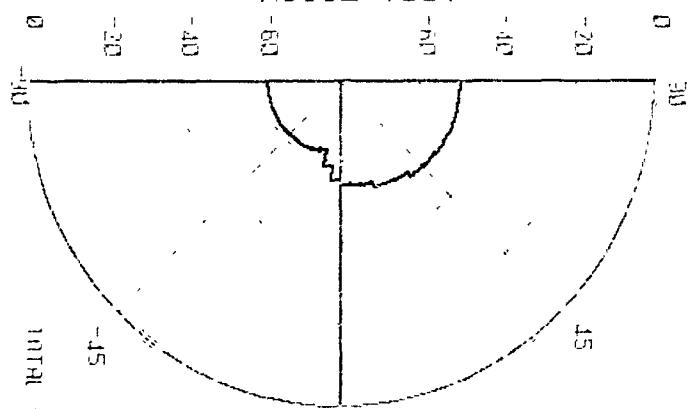
ARRIVAL ANGLE



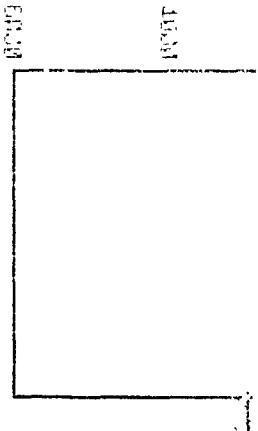
DB LOSS



NOISE (DB)



DEPTH IN METERS



AREA 3B WINTER

S 20 R 9842 F 2000

1450 145 1500 1550



LRAFP

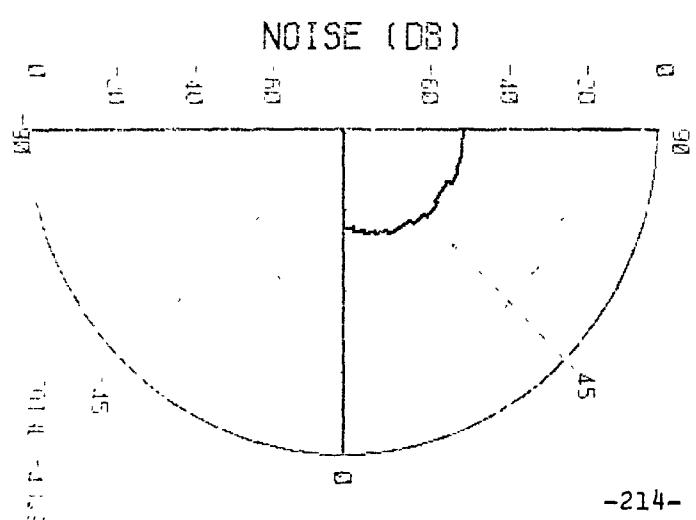
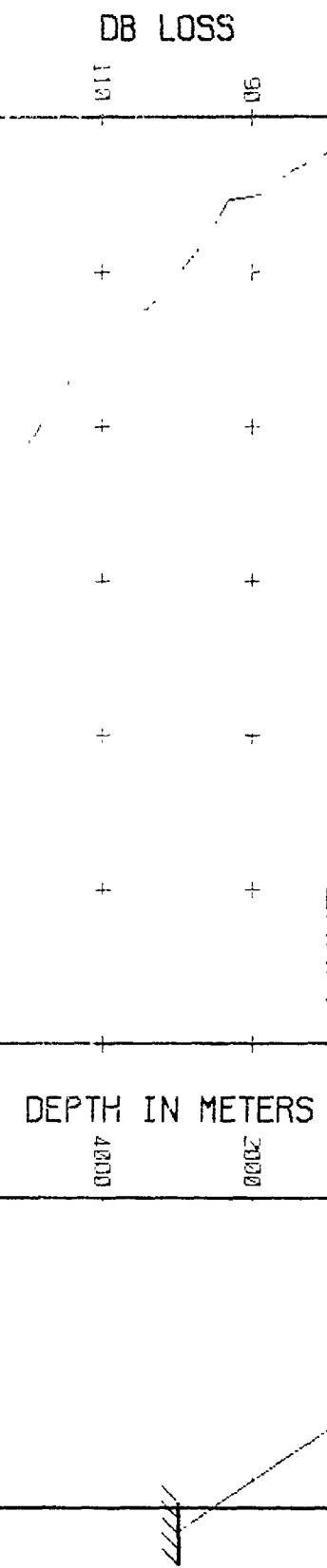


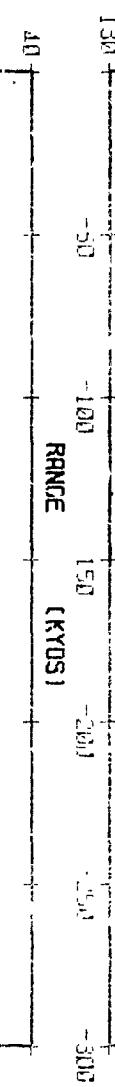
Fig. 3 34 MILES

S 52 R 9842 F 2363

43111 1510 1540 1550

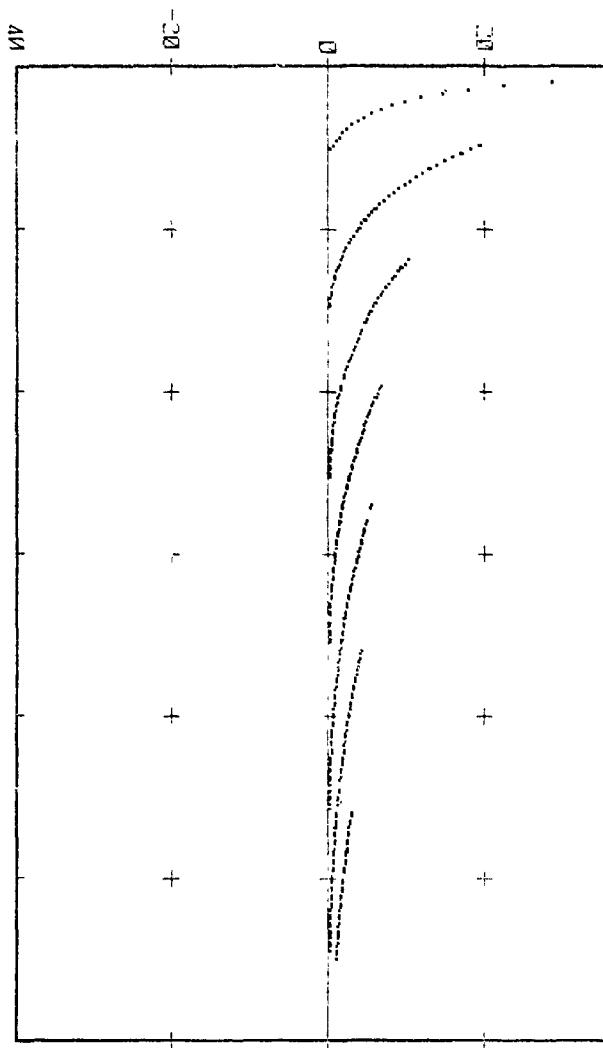
100 200

DB LOSS

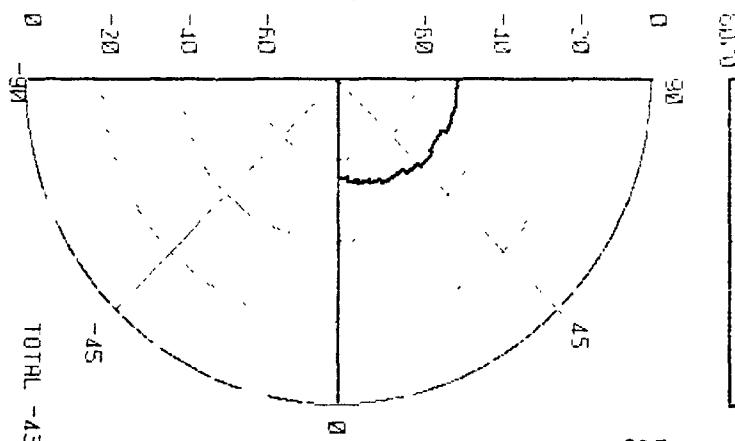


RANGE (KYOS)

ARRIVAL ANGLE



NOISE (DB)



DEPTH

TOTAL -43.9 DB

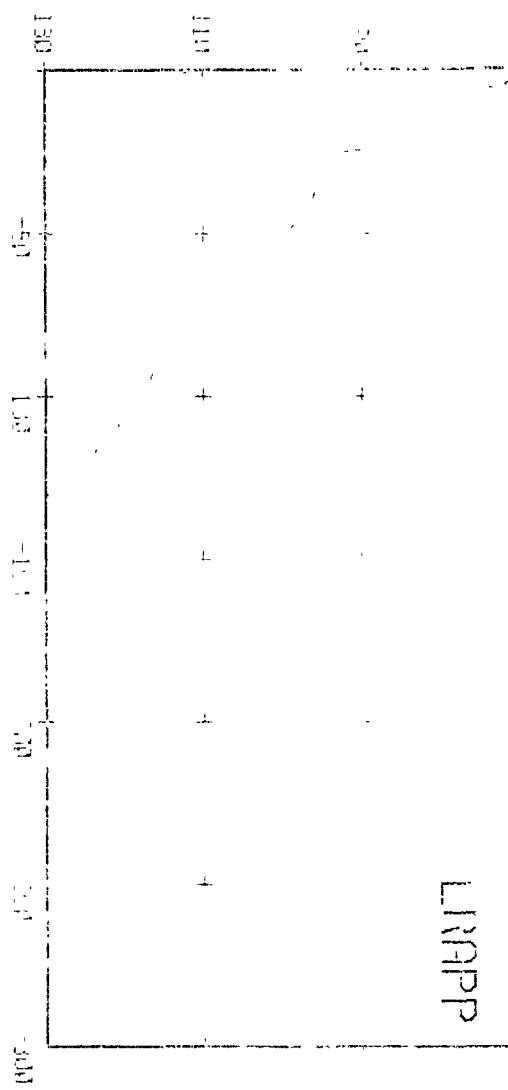
FIGER 38 WINTER

S 30W R 9842 F 2030

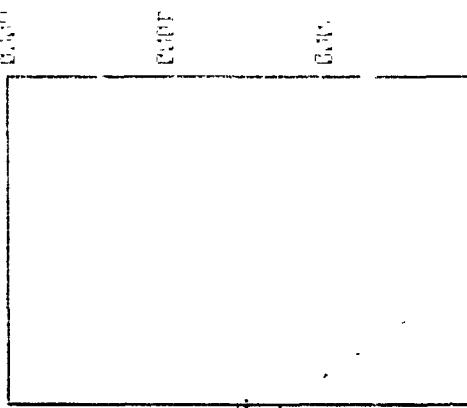
L1R1P1P

135M 11° 15M 1550

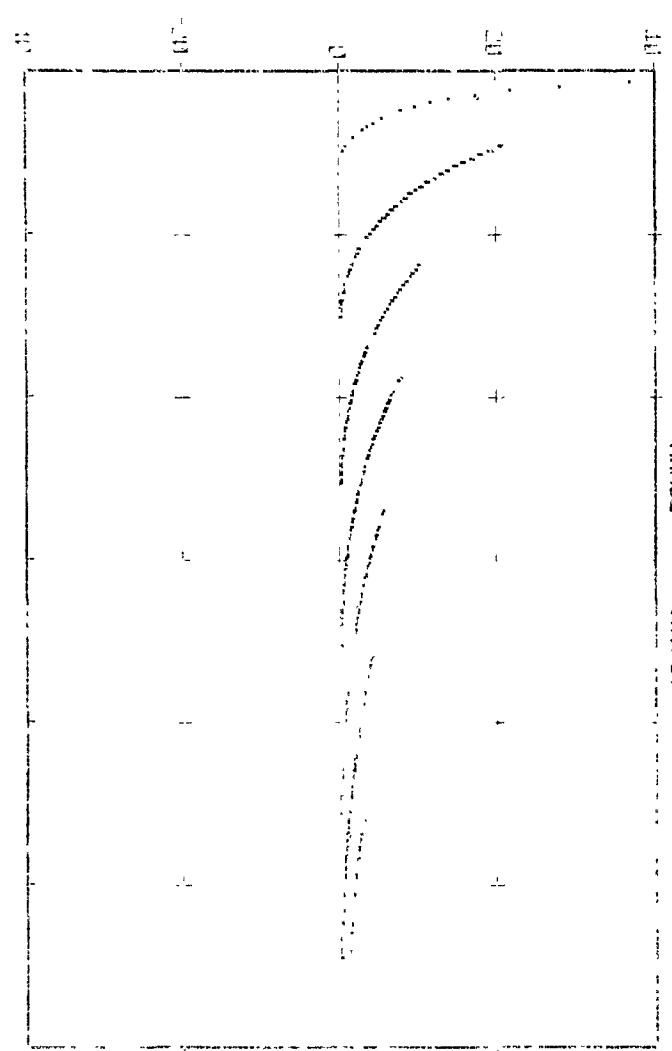
DB LOSS



DEPT IN METERS



ARRIVAL ANGLE



70

AREA 3B WINTER

S 20 R 60 F 2500

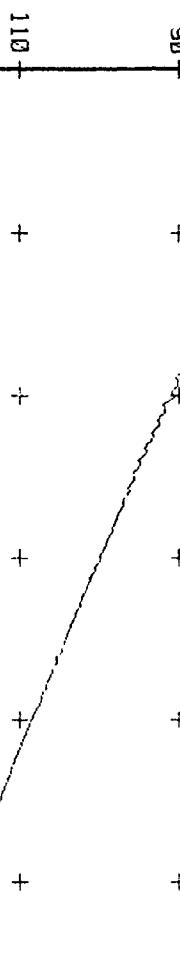
1450 M/S

1500

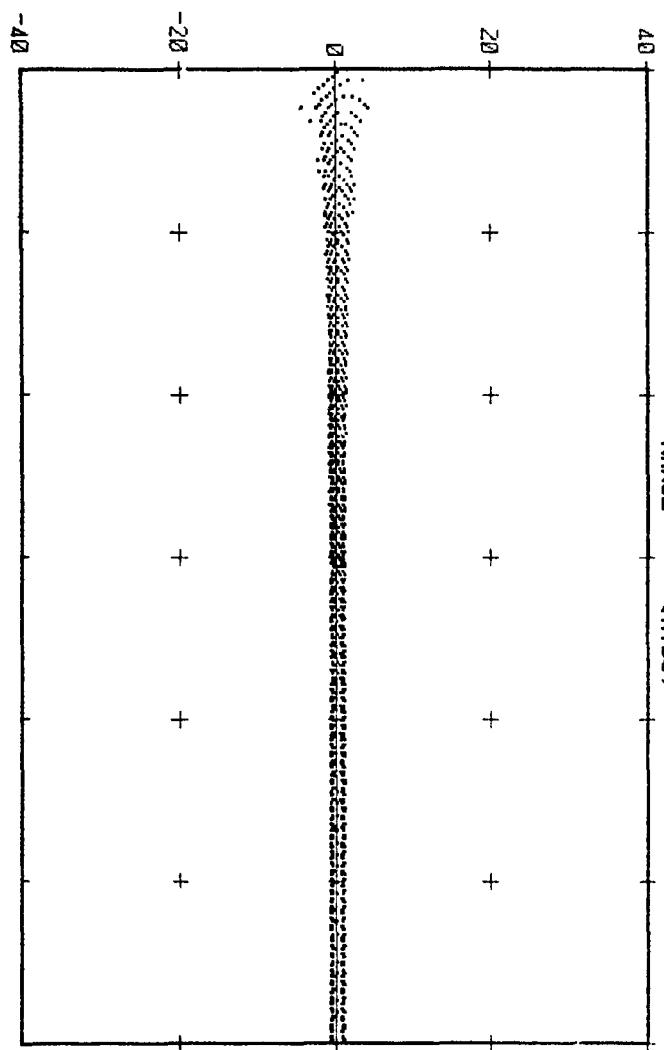
1550

L.RAPP

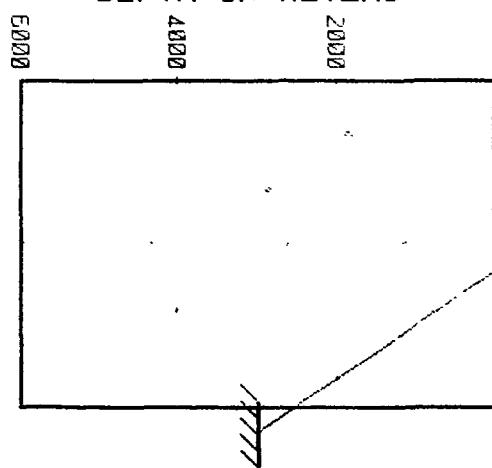
DB LOSS



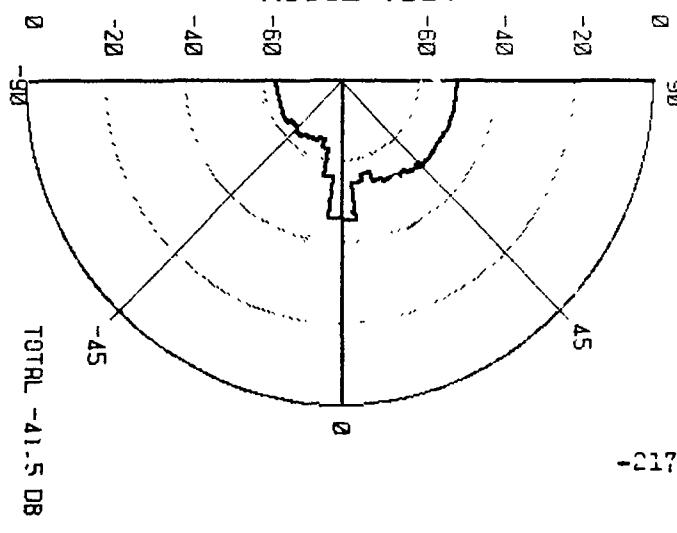
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



-217

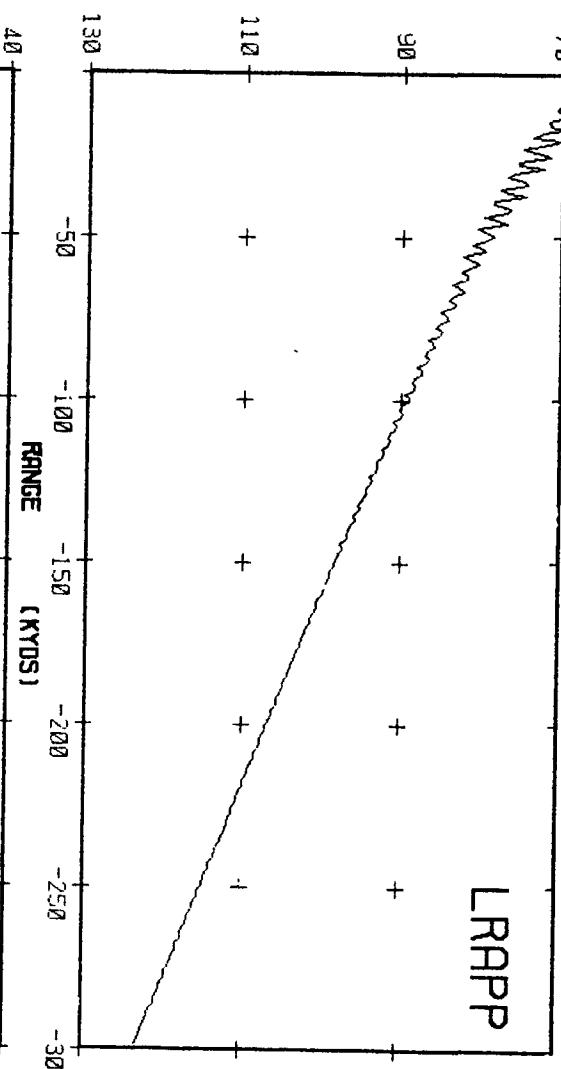
AREA 3B WINTER

S 50 R 60 F 2500

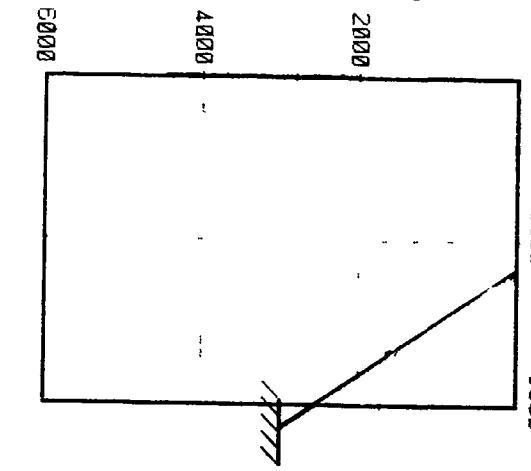
1450 M/S 1500 1550

LRAPP

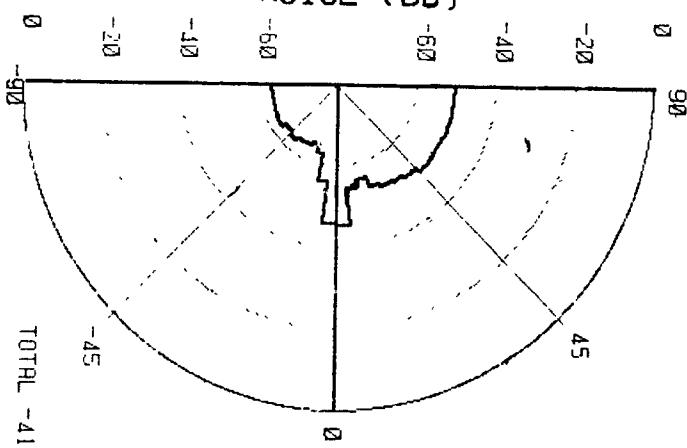
DB LOSS



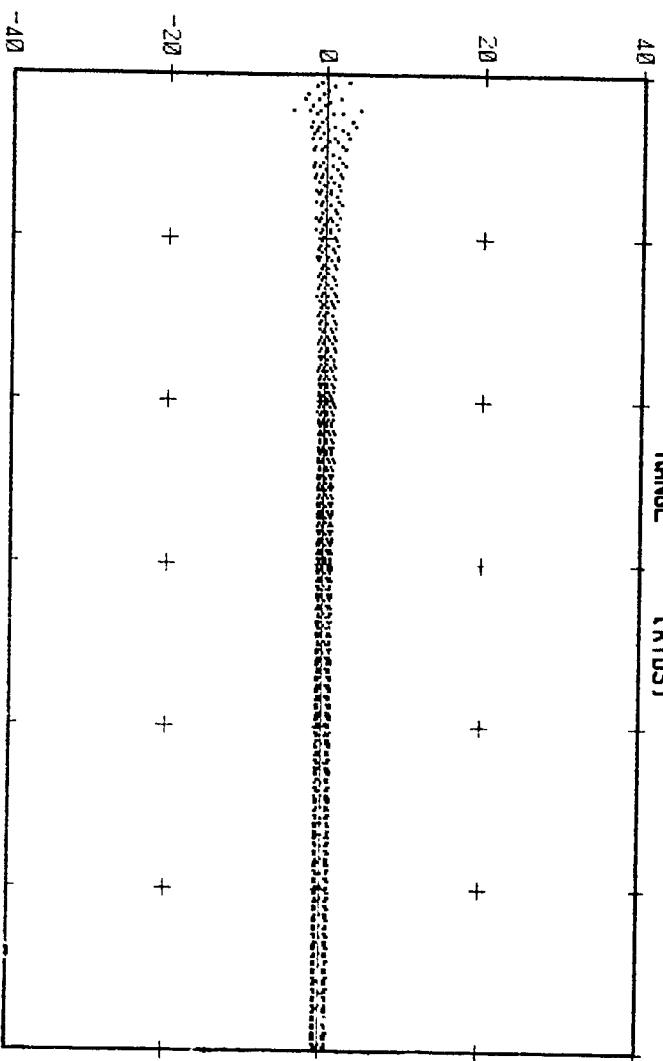
DEPTH IN METERS



NOISE (DB)



ARRIVAL ANGLE



TOTAL -41.5 DB

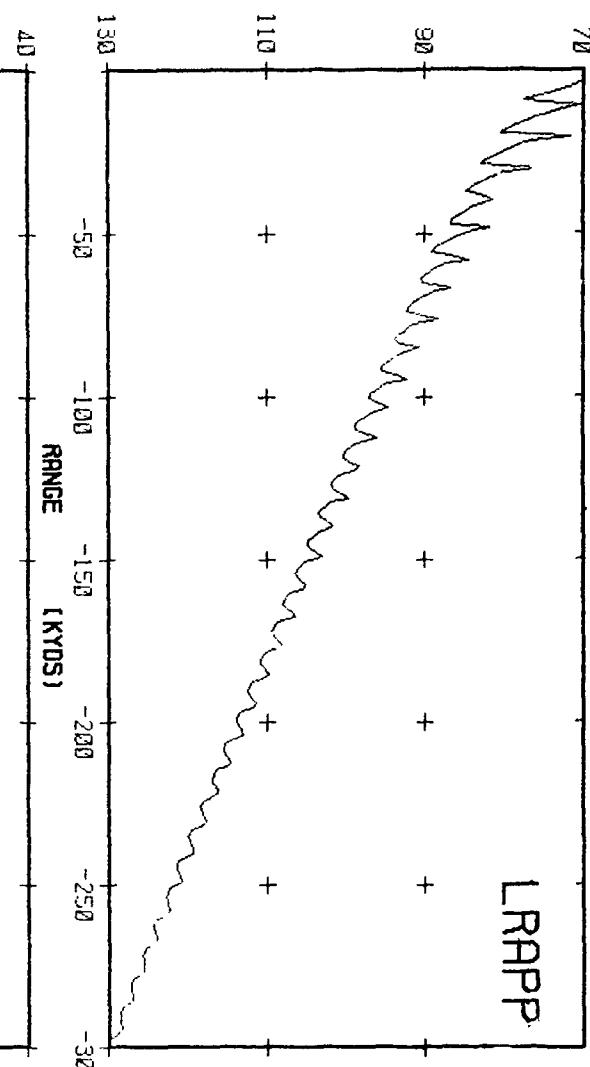
70

AREA 3B WINTER

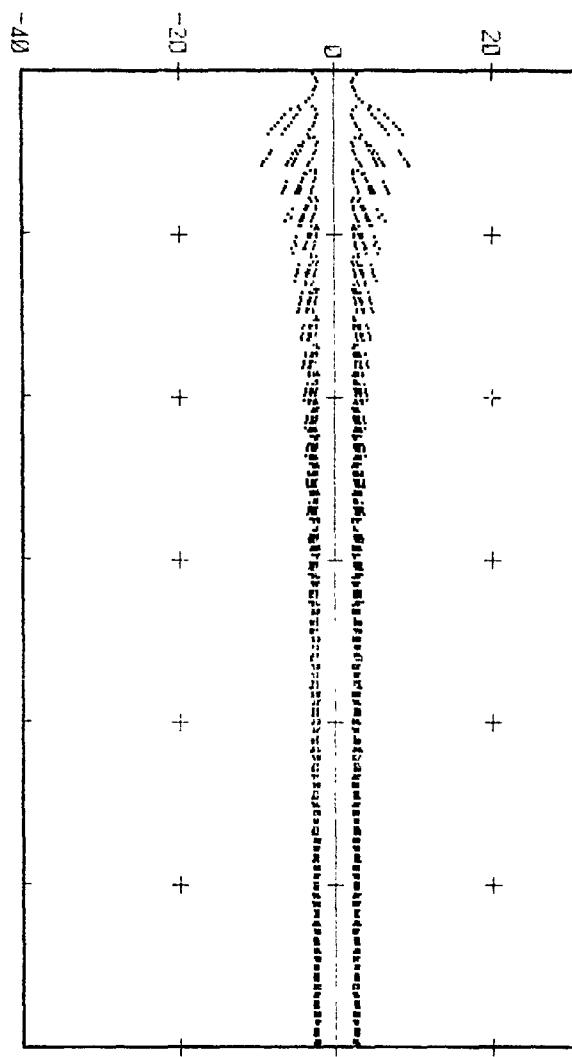
S 300 R 60 F 2500

1450 M/S 1500 1553

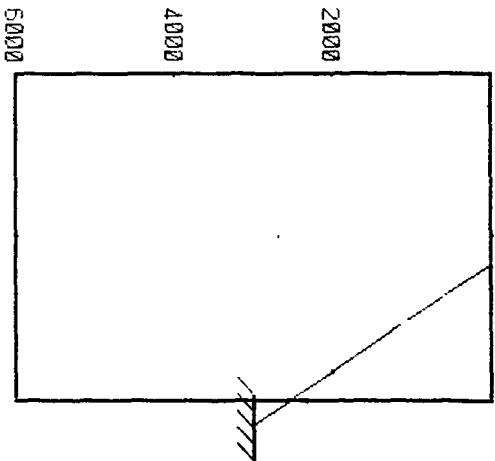
DB LOSS



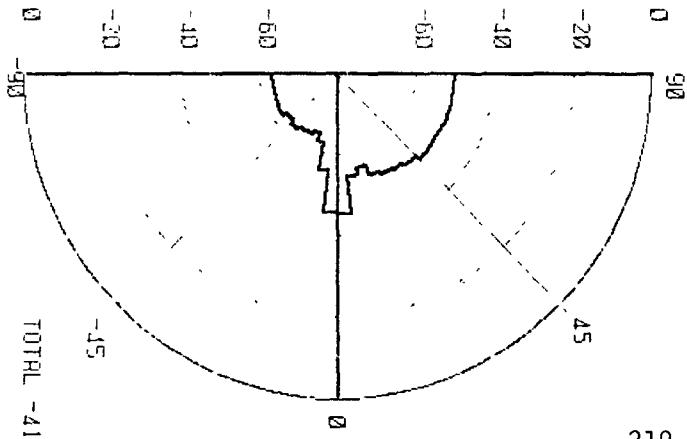
ARRIVAL ANGLE



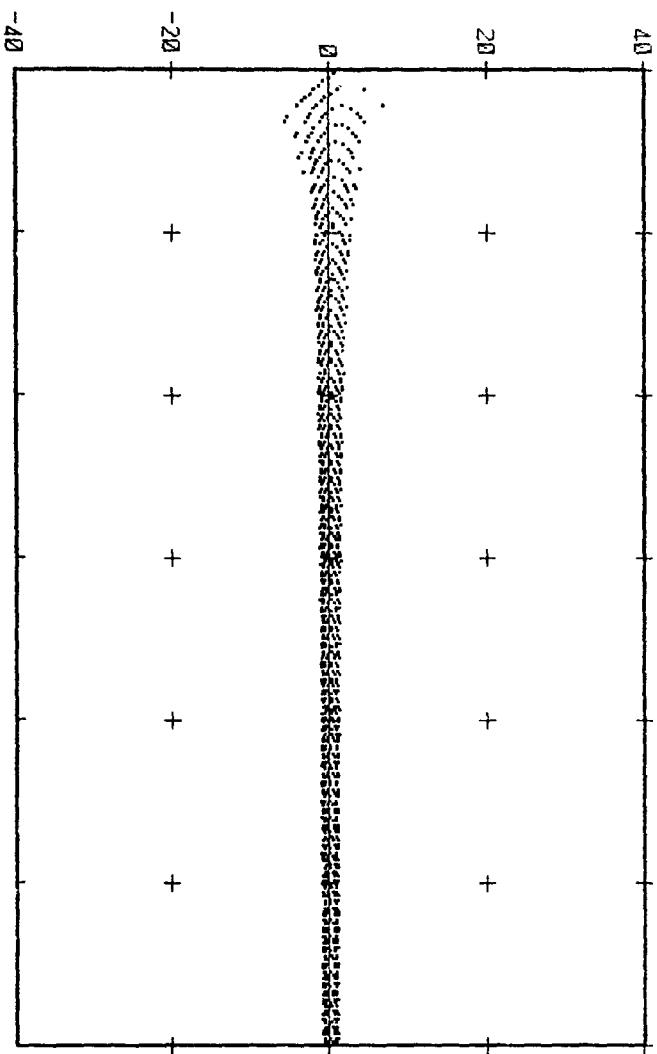
DEPTH IN METERS



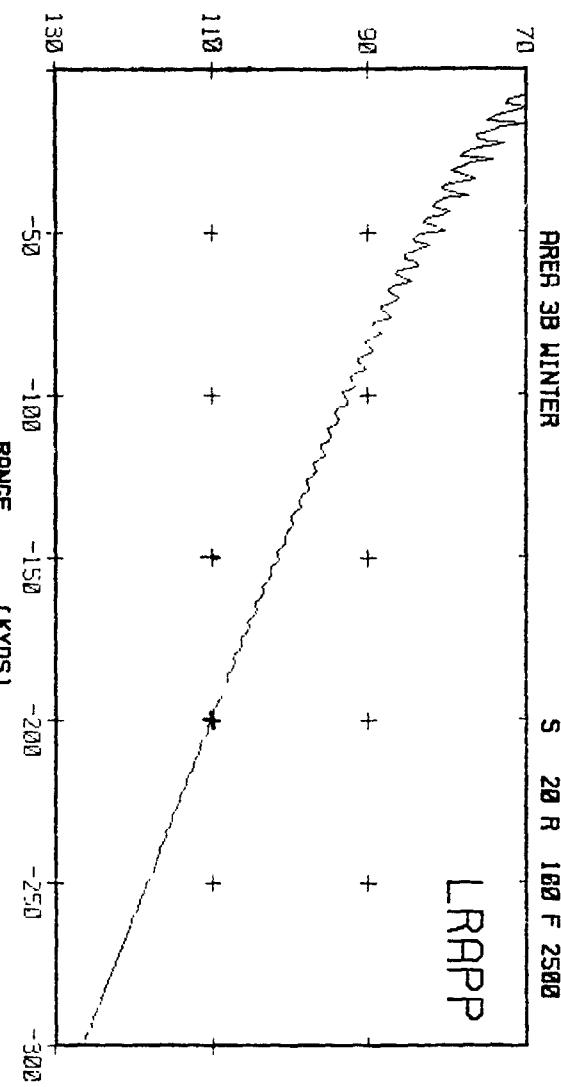
NOISE (DB)



ARRIVAL ANGLE

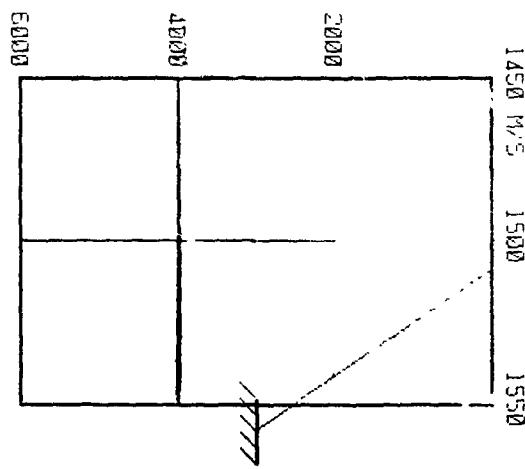


DB LOSS

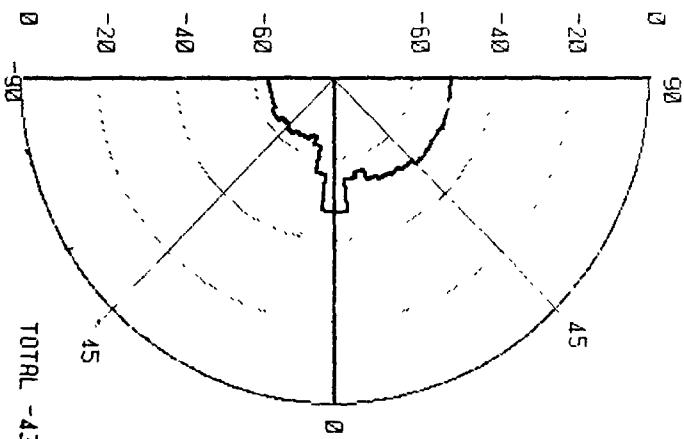


LRAAPP

DEPTH IN METERS



NOISE (DB)



TOTAL -42.2 DB

70

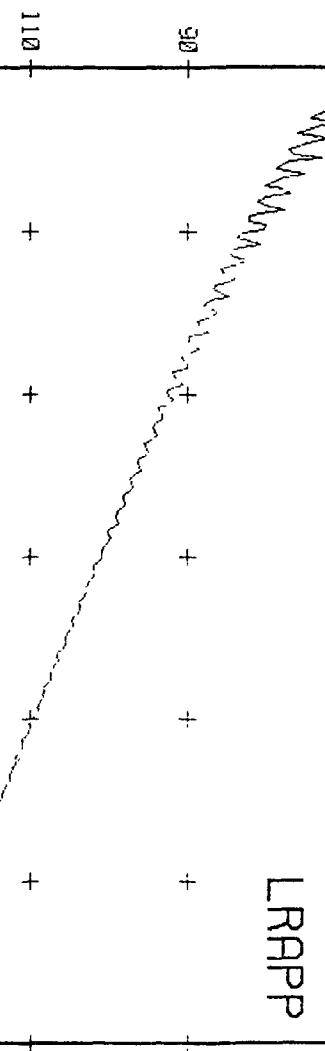
AREA 3B WINTER

S 50 R 100 F 2500

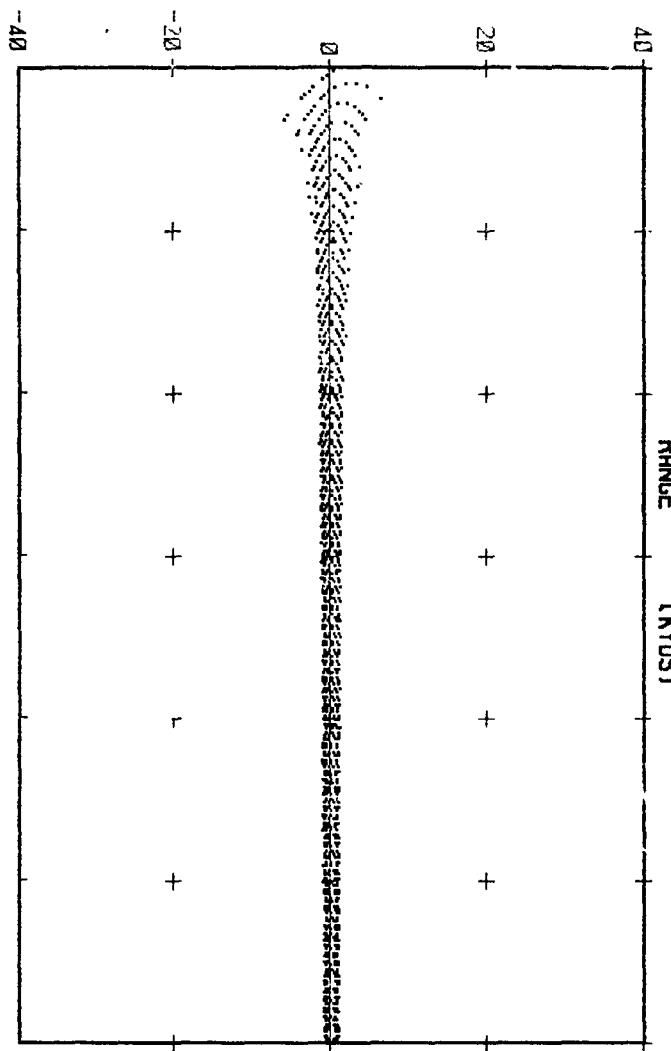
1450 11/5 1509

1550

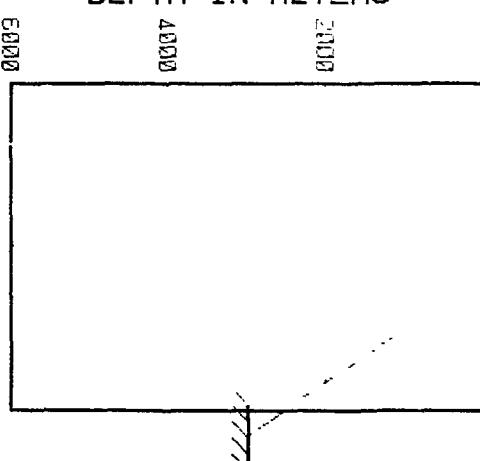
DB LOSS



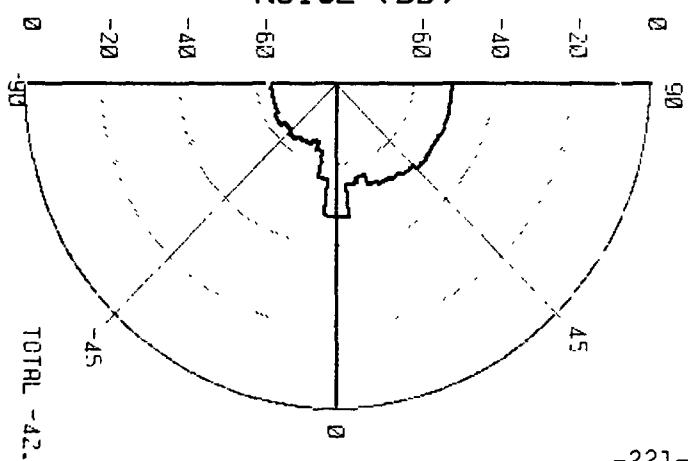
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



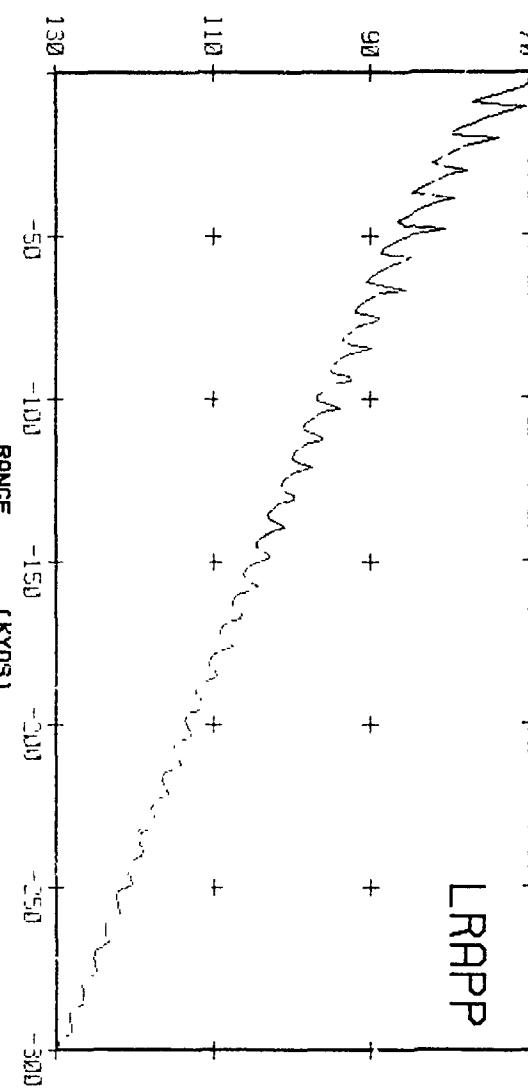
AREA 3B WINTER

S 300 R 100 F 2500

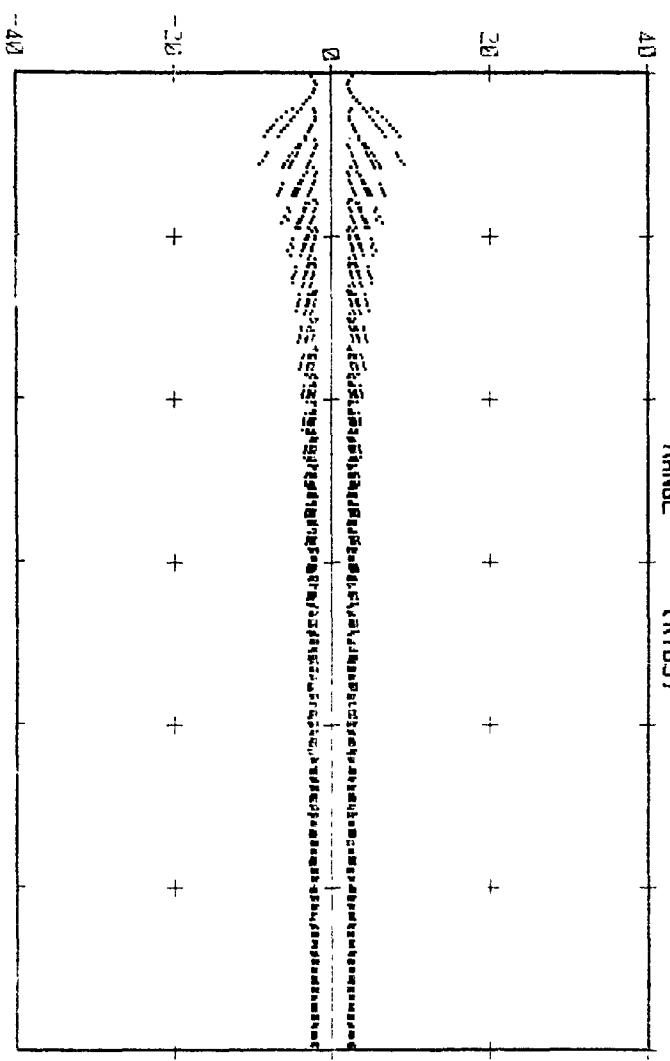
1450 M/S 1500 1550

LRAPP

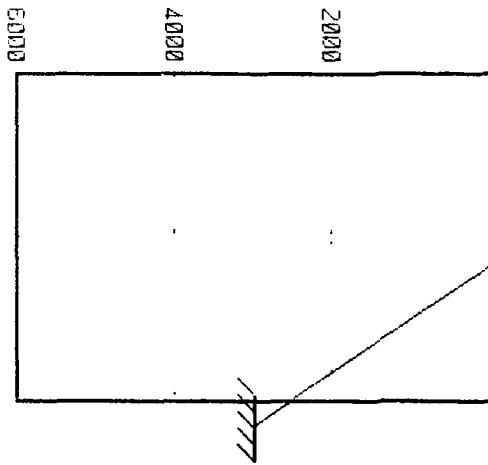
DB LOSS



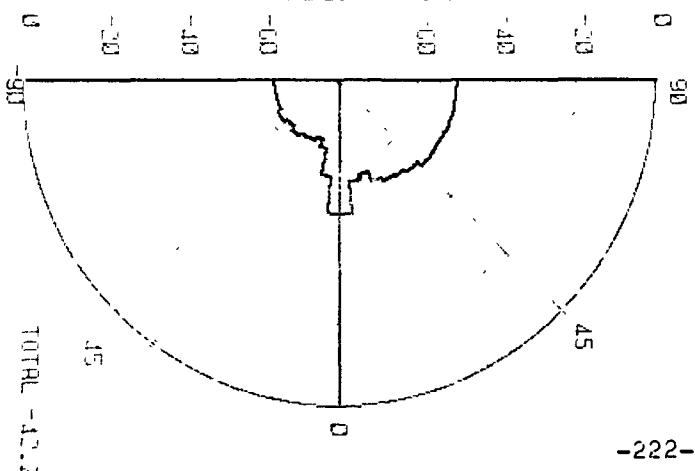
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -42.2 DB

70

AREA 3B WINTER

S 20 R 300 F 2500

1450 M/S

1500

1550

LRAPP

DB LOSS

90

110

130

150

170

190

210

230

250

270

290

310

330

350

370

390

410

430

450

470

490

510

530

550

DEPTH IN METERS

EDDIE

90

45

0

-45

-90

-135

-180

-225

-270

-315

-223-

NOISE (DB)

-90

-45

0

45

90

EDDIE

450

470

490

510

530

550

570

590

610

630

650

670

690

710

730

750

770

790

810

830

850

870

890

910

930

950

970

990

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4130

4150

4170

4190

4210

4230

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4310

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4990

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5090

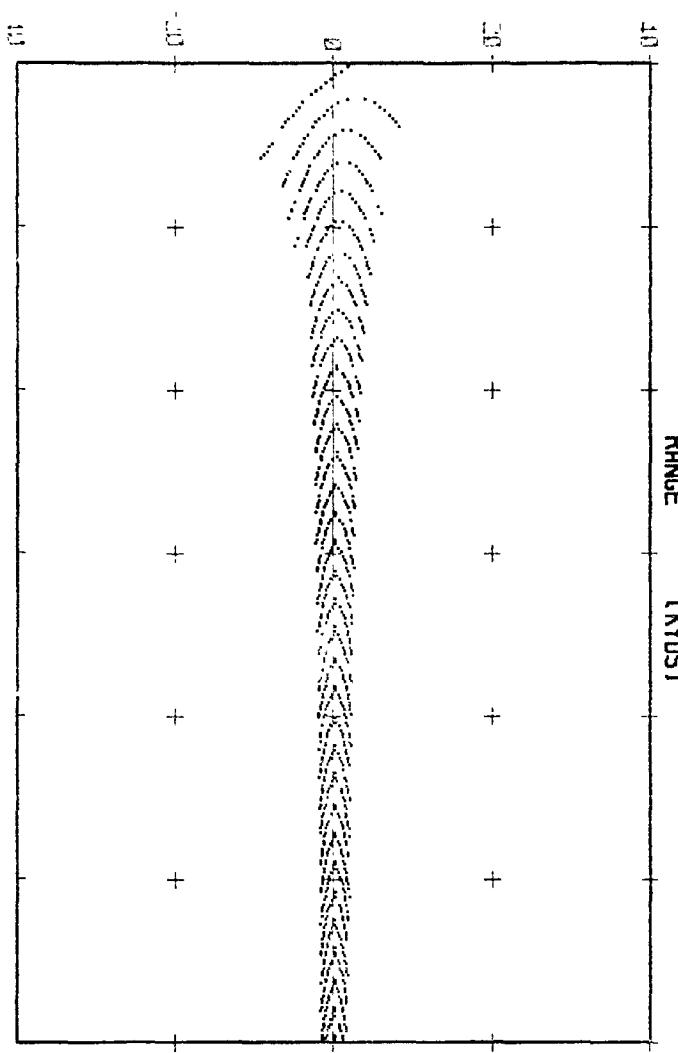
5110

5130

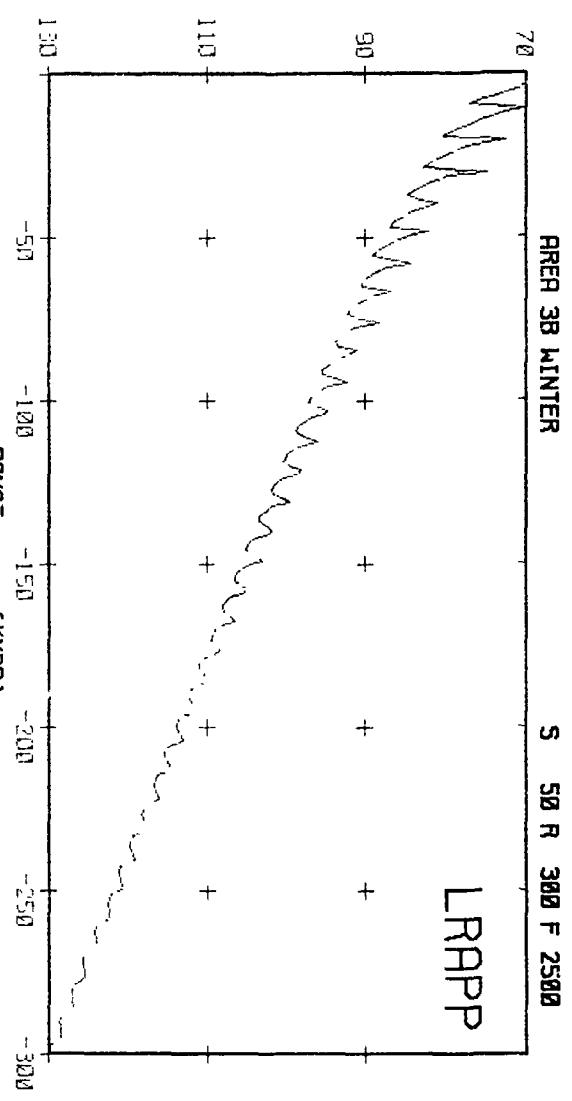
5150

5170</div

ARRIVAL ANGLE



DB LOSS



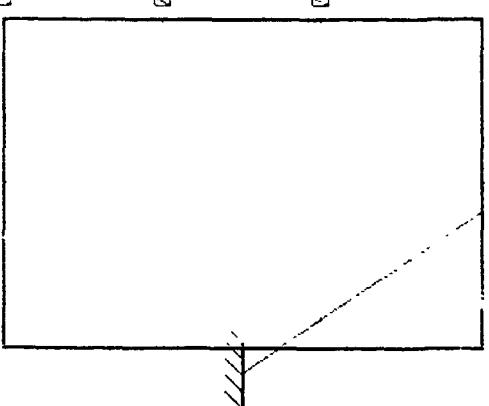
AREA 3B WINTER

S 50 R 300 F 2500

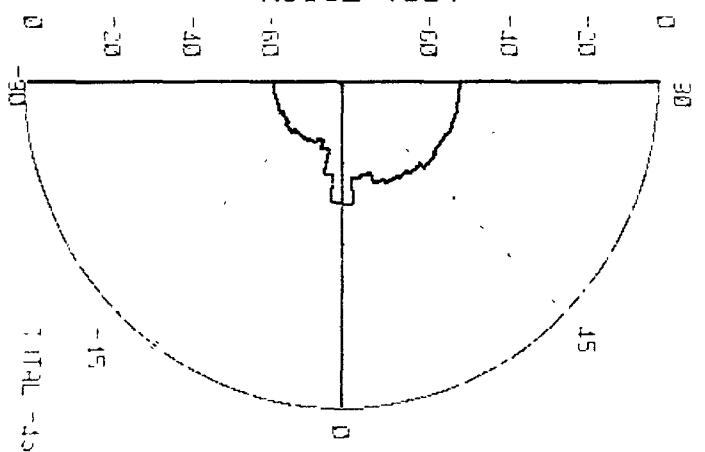
1450 M/S 1500 1550

LRAPP

DEPTH IN METERS



NOISE (DB)



10

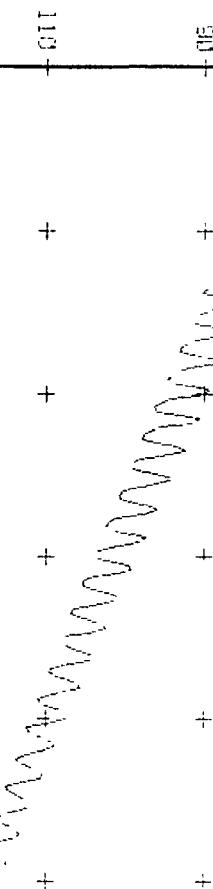
AREA 3B WINTER

S 35° R 30° F 2530

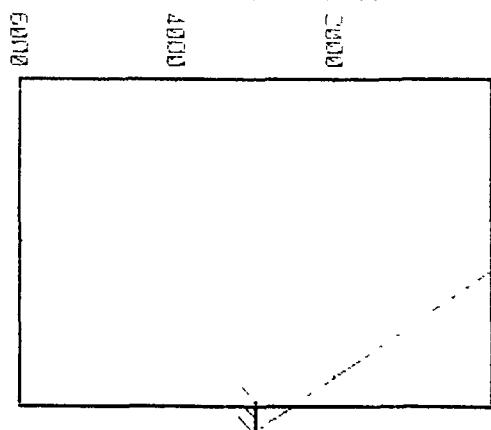
1450 145 1500 1550

LRAPP

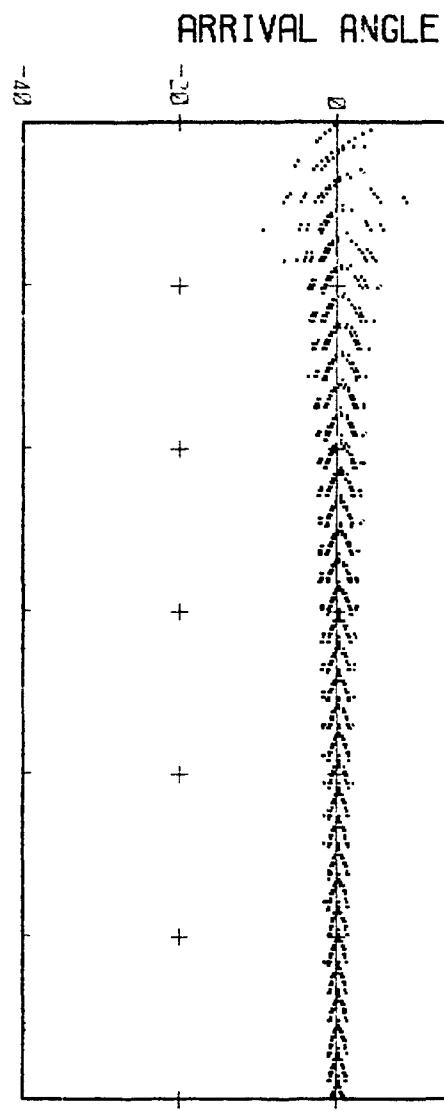
DB LOSS



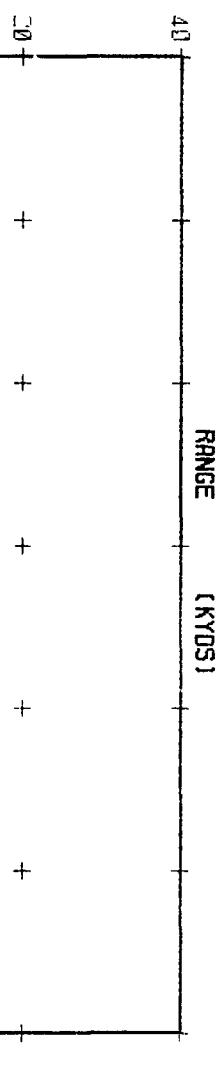
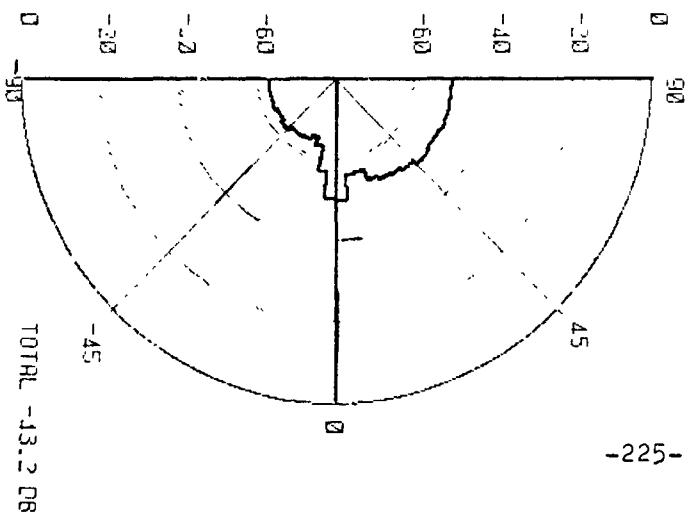
DEPTH IN METERS



NOISE (DB)



ARRIVAL ANGLE



70

ARR 3B WINTER

S 20R 500F 2500

1450 11/5 1530 1550

LRAPP

DB LOSS

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Fig. 20 INTER

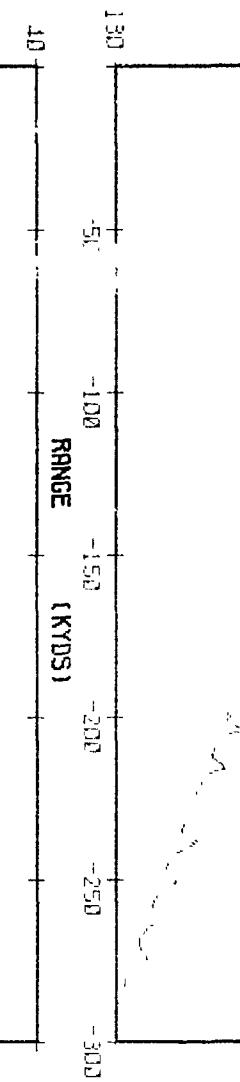
S 50 R 56 F 2 Jnd

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1500

1550

DB LOSS



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380

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810

820

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1000

DEPTH IN METERS

1000
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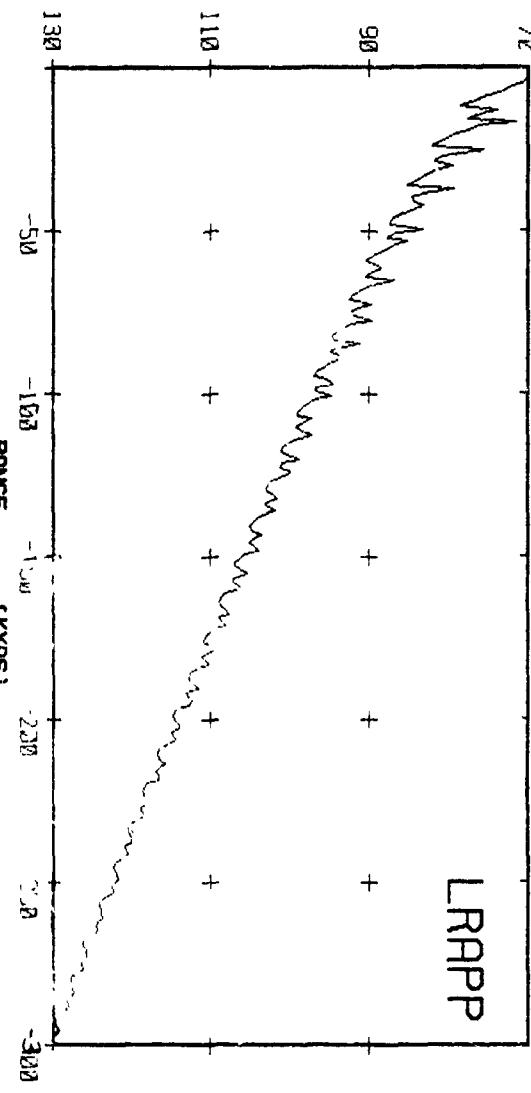
AREA 3B WINTER

S 300 R 500 F 2500

1450 M/S 1500 1550

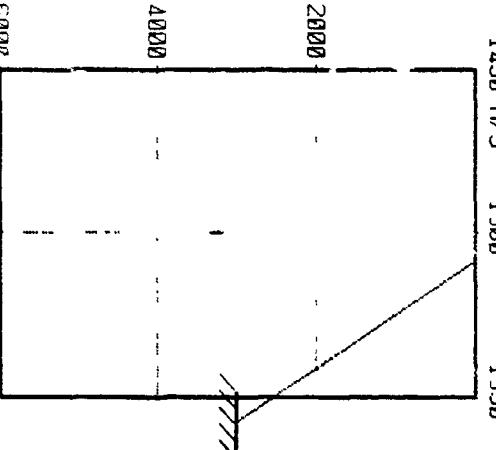
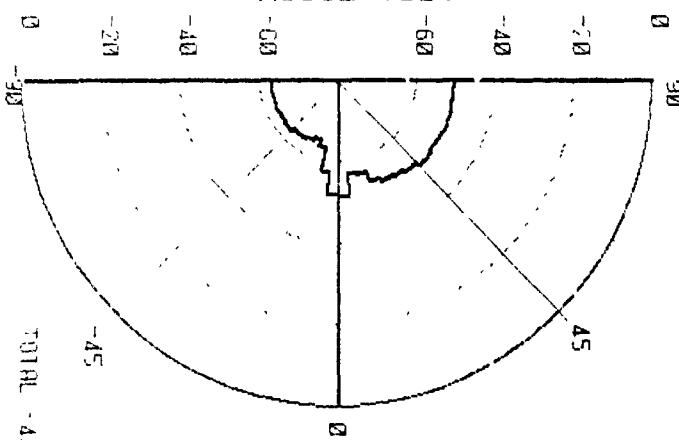
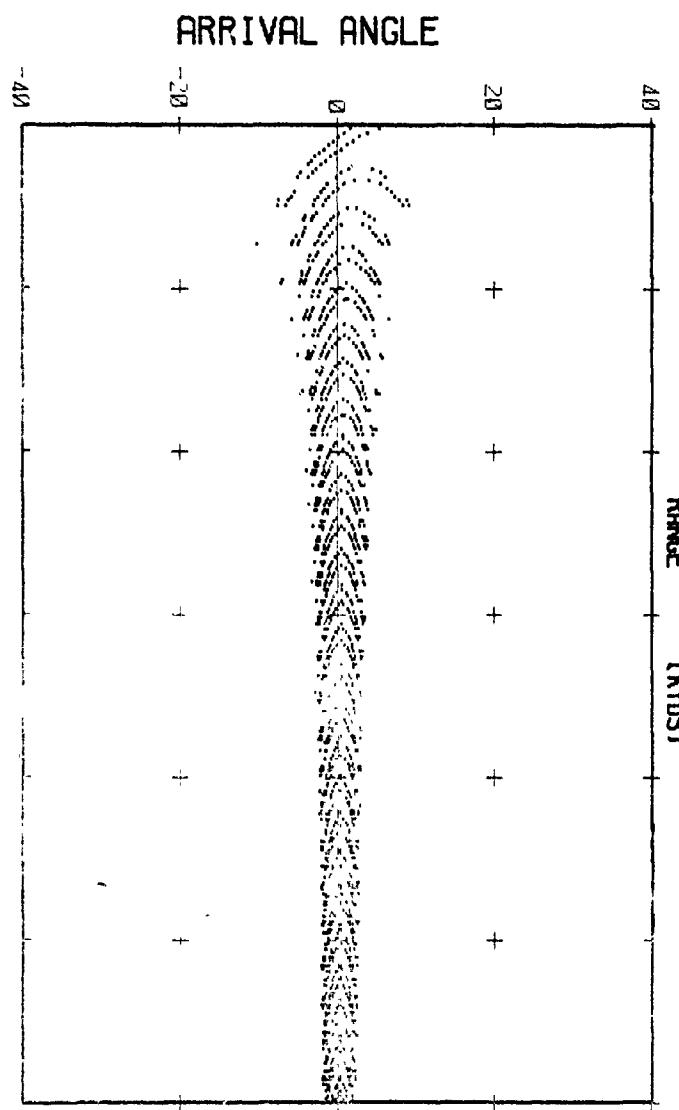
LRAAPP

DB LOSS



DEPTH IN METERS

NOISE (DB)



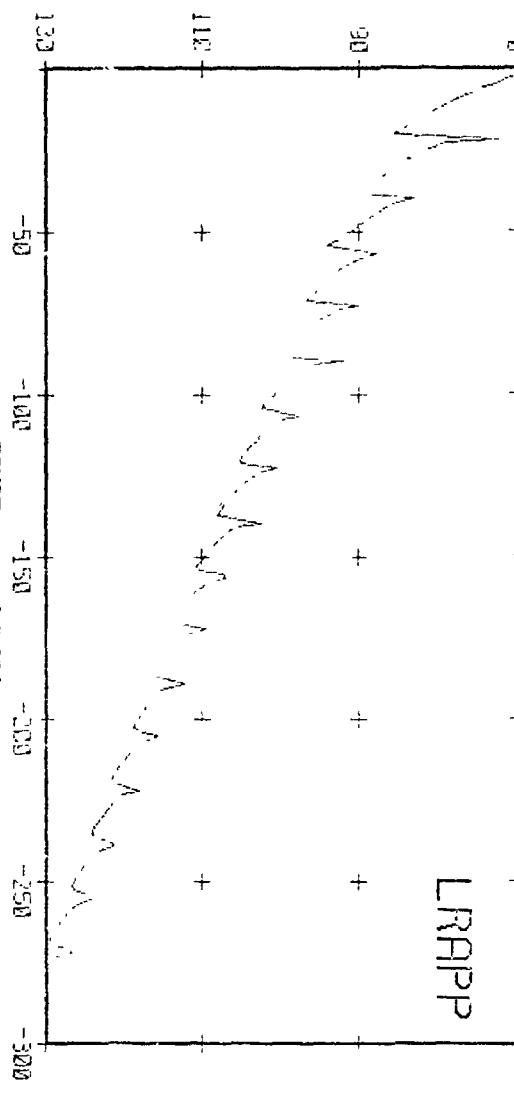
"D

RIVER 3B WINTER

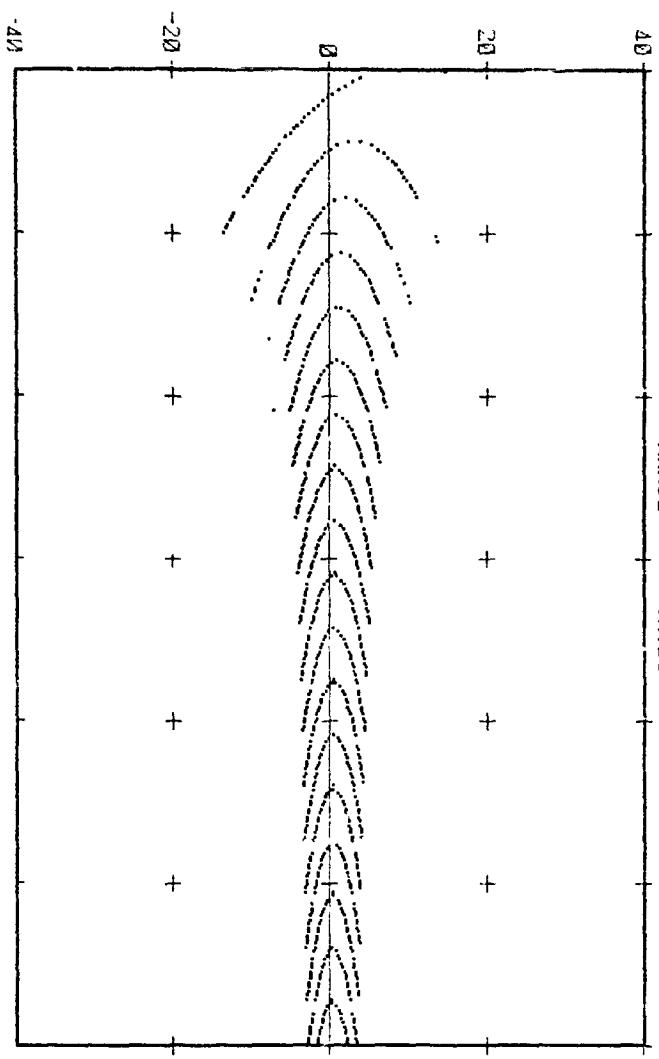
S 24 R 16E F 256M

1450 H 5 1500 1550

DB LOSS

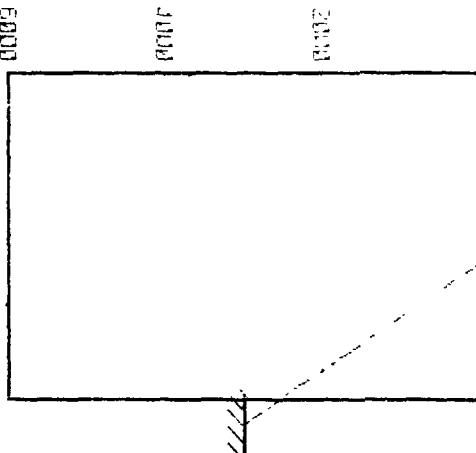


ARRIVAL ANGLE

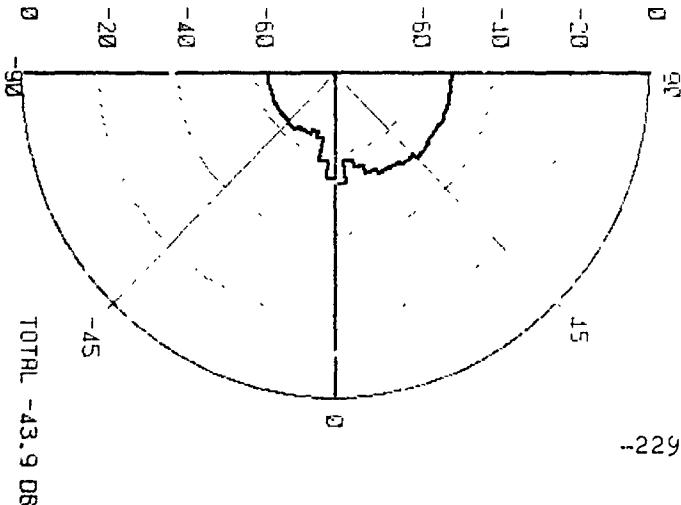


LRA/P

DEPTH IN METERS



NOISE (DB)



TOTAL -43.9 DB

AREA 3B WINTER

S 50 R 1000 F 250E

1450 M/S 1500 1550

LRRPP

DB LOSS

70

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10

110

90

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ARRIVAL ANGLE

RANGE (Km)

DEPTH IN METERS

TOTAL - 10.3 DS

-230-

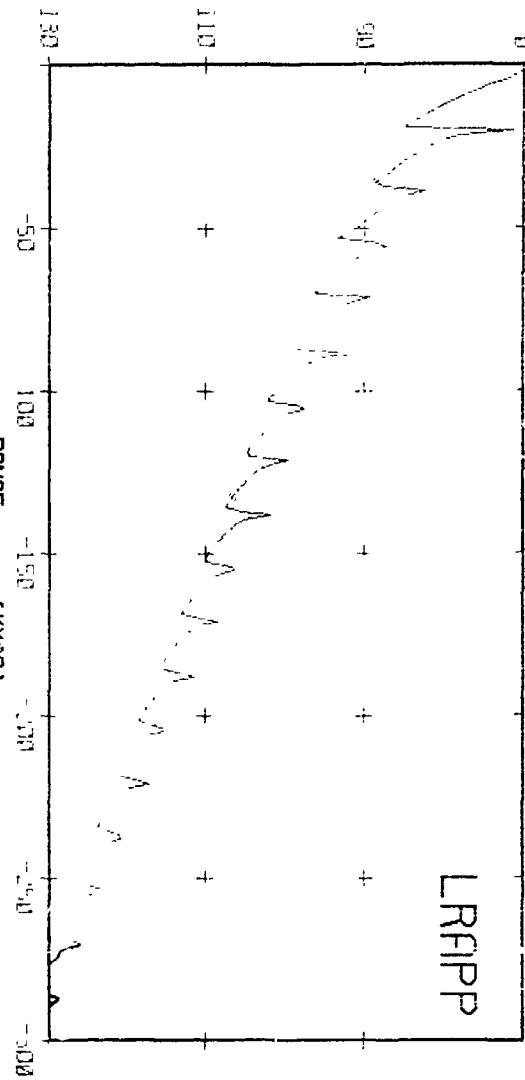
AREA 33 WINTER

S 300 R 1000 F 2500

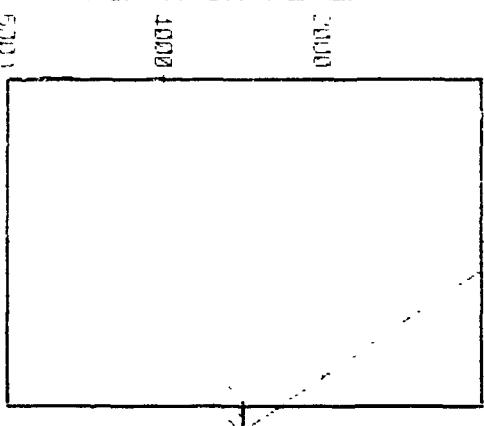
1450 1450 1500 1550

LRFAPP

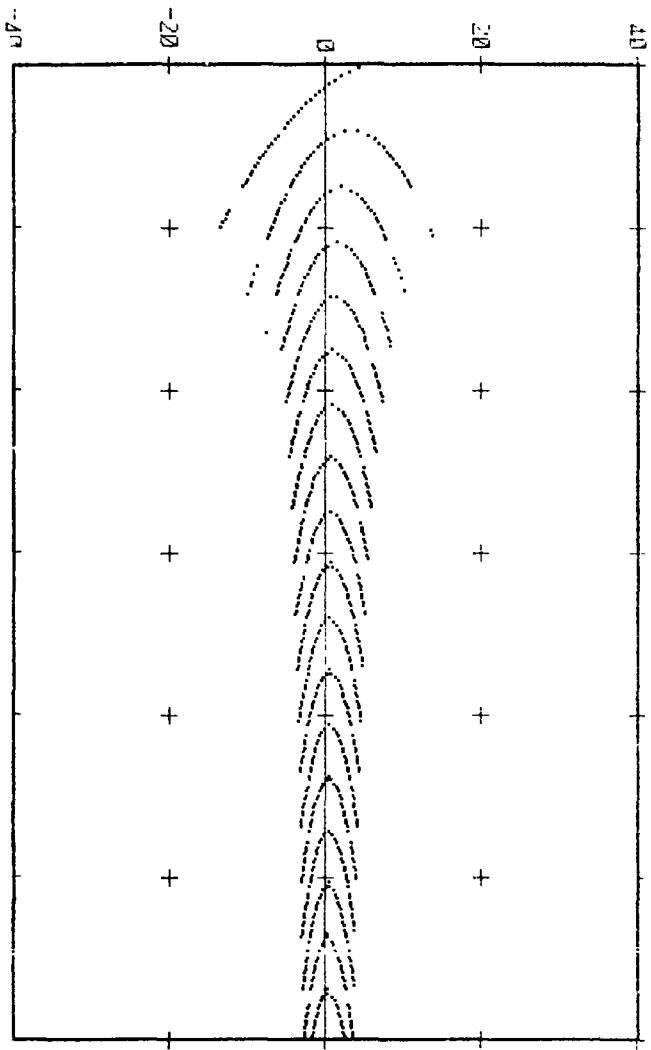
DB LOSS



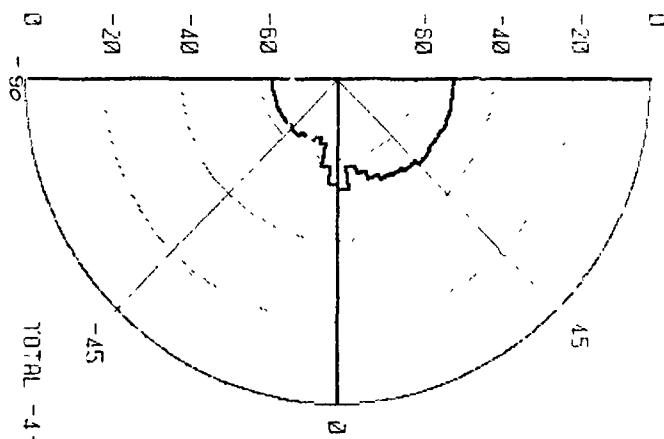
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -43.9 DB

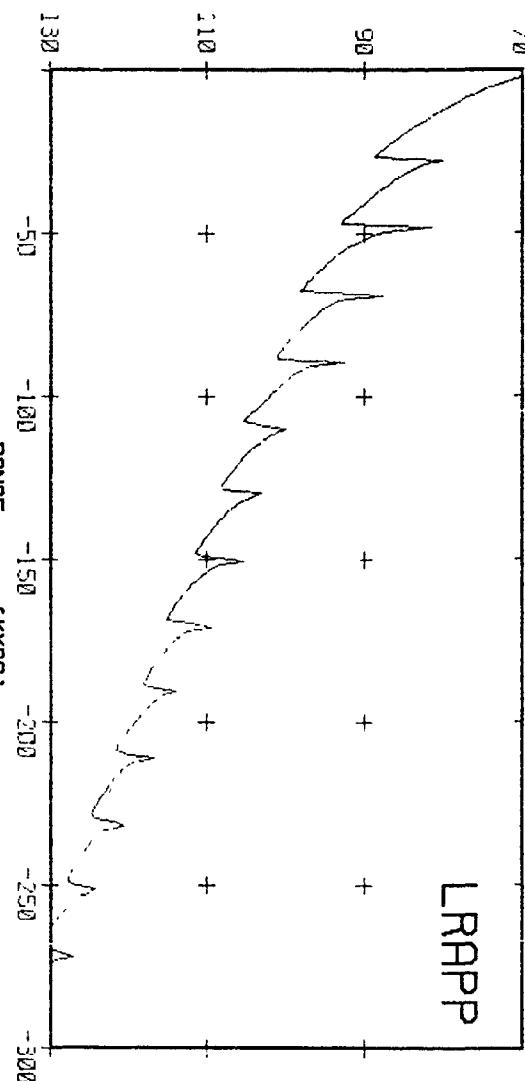
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S 20 R 1500 F 2500

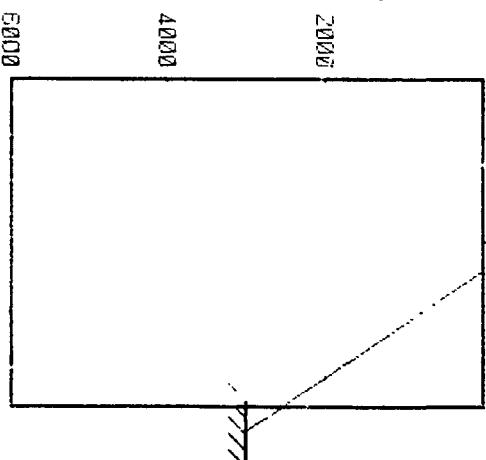
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LRAPP

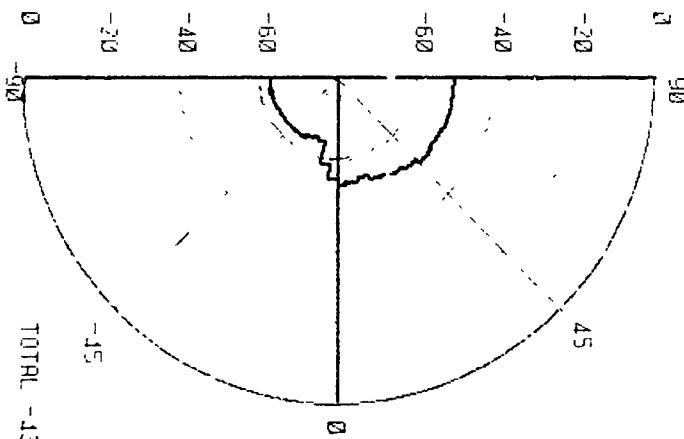
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -43.8 DB

70

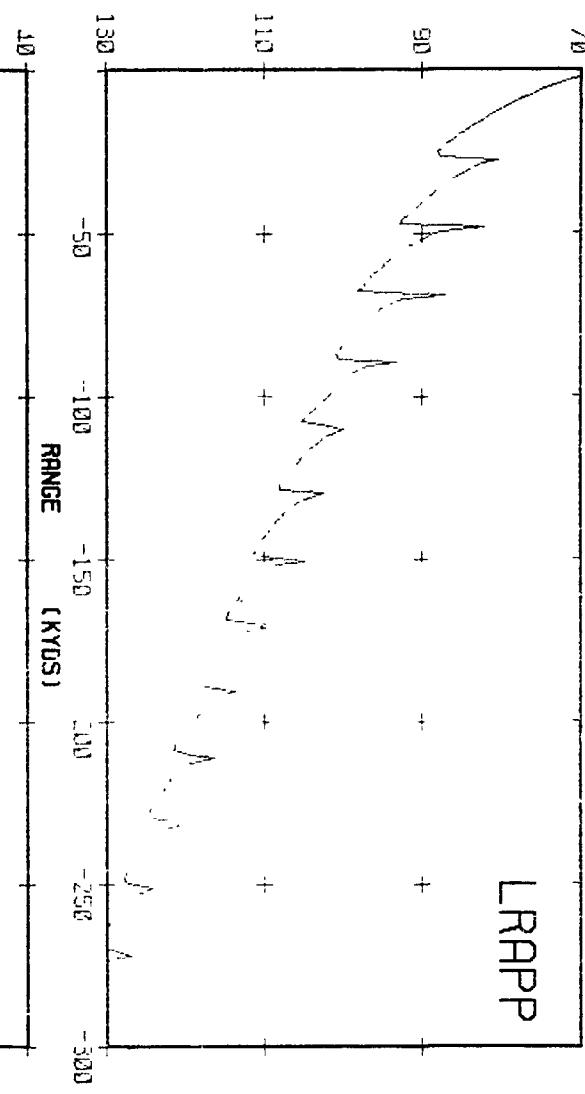
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S 50 R 1500 F 2500

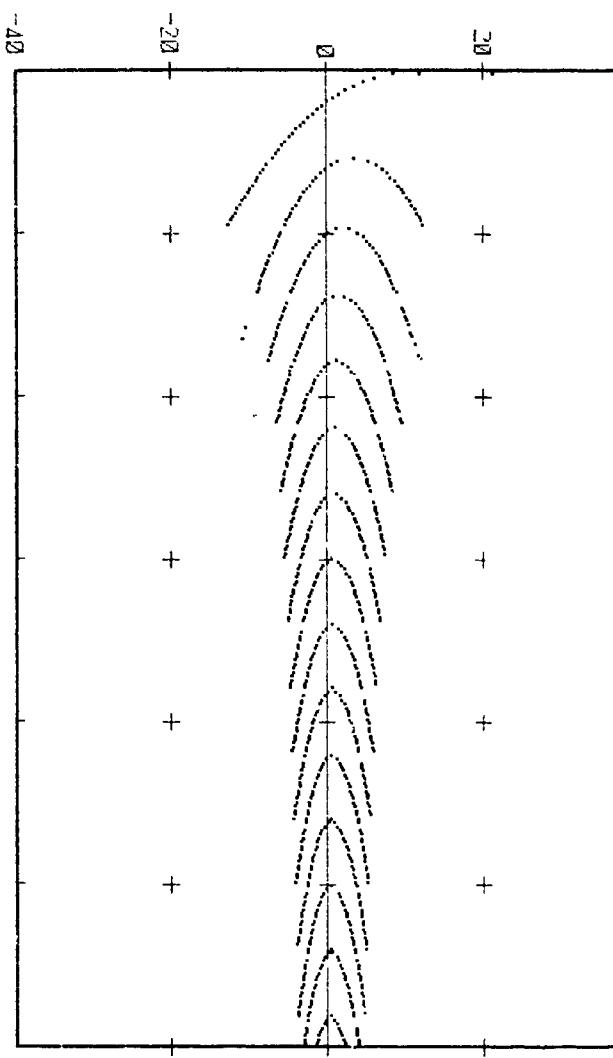
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LRAPP

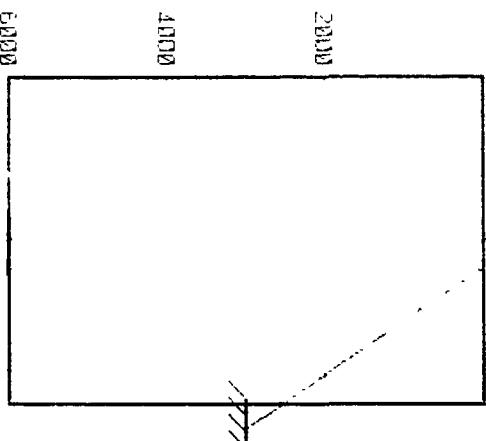
DB LOSS



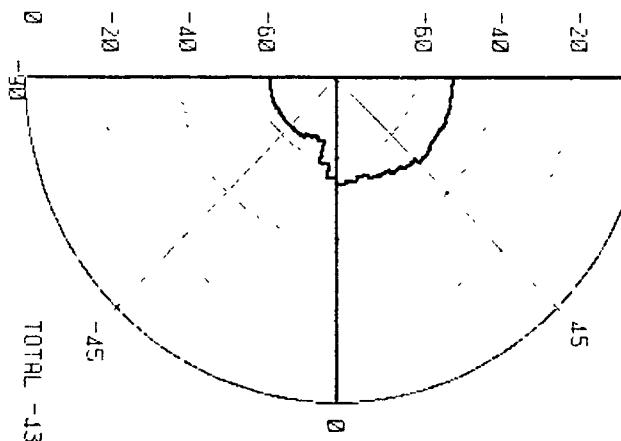
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



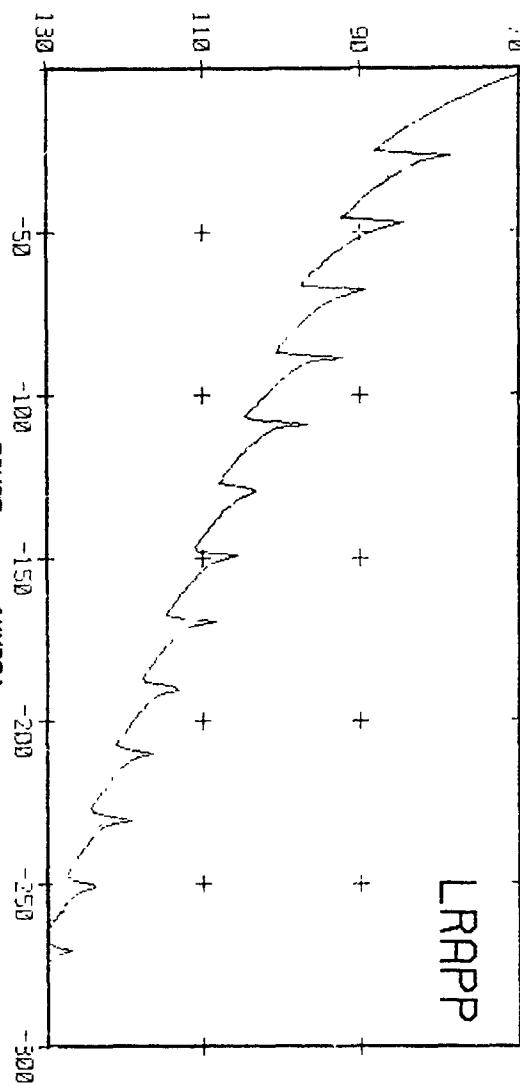
AIRER 3B WINTER

S 300 R 1500 F 2500

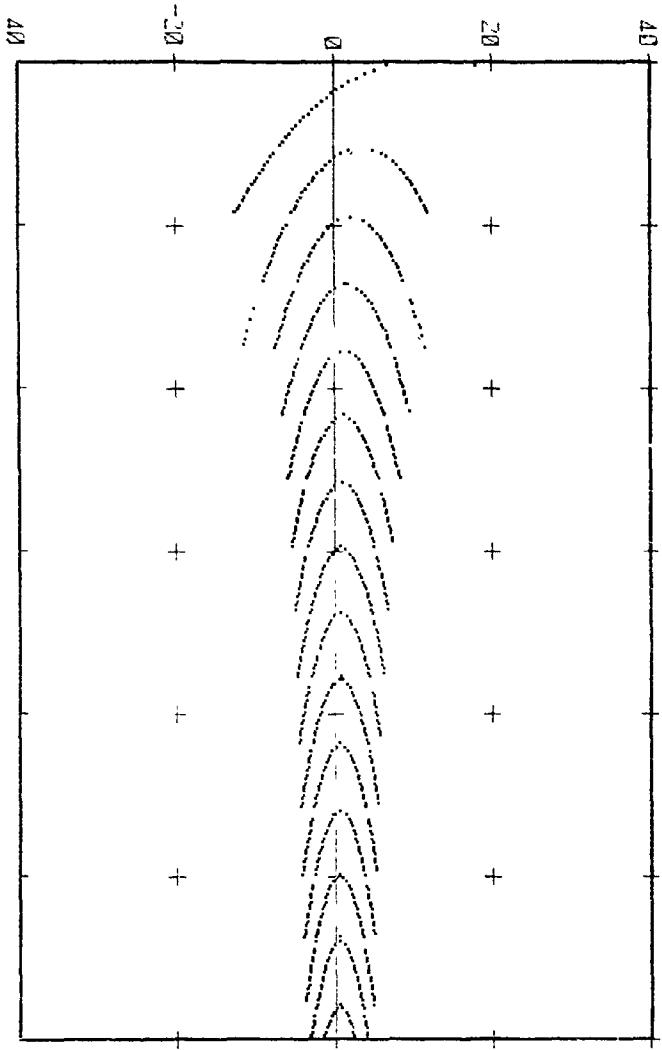
1450 1/5 1300 1550

LRAPP

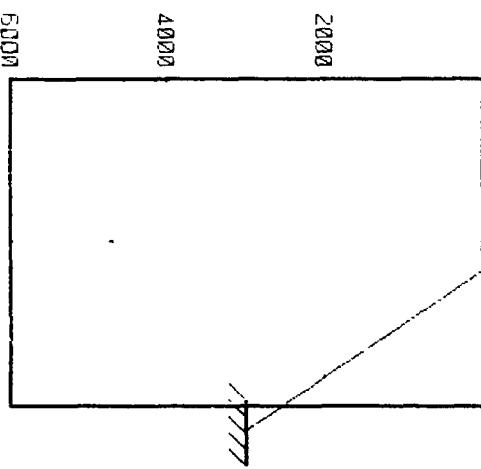
DB LOSS



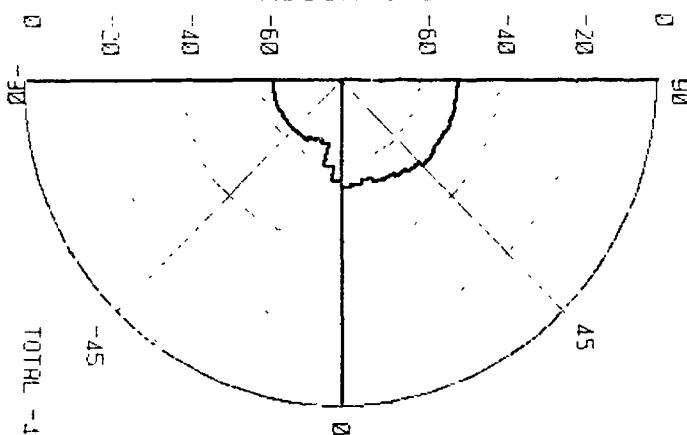
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



T_b

RER 3B WINTER

S 20 R 6062 F 25M

1450 11.5

1500

1550

LRAFP

DB LOSS

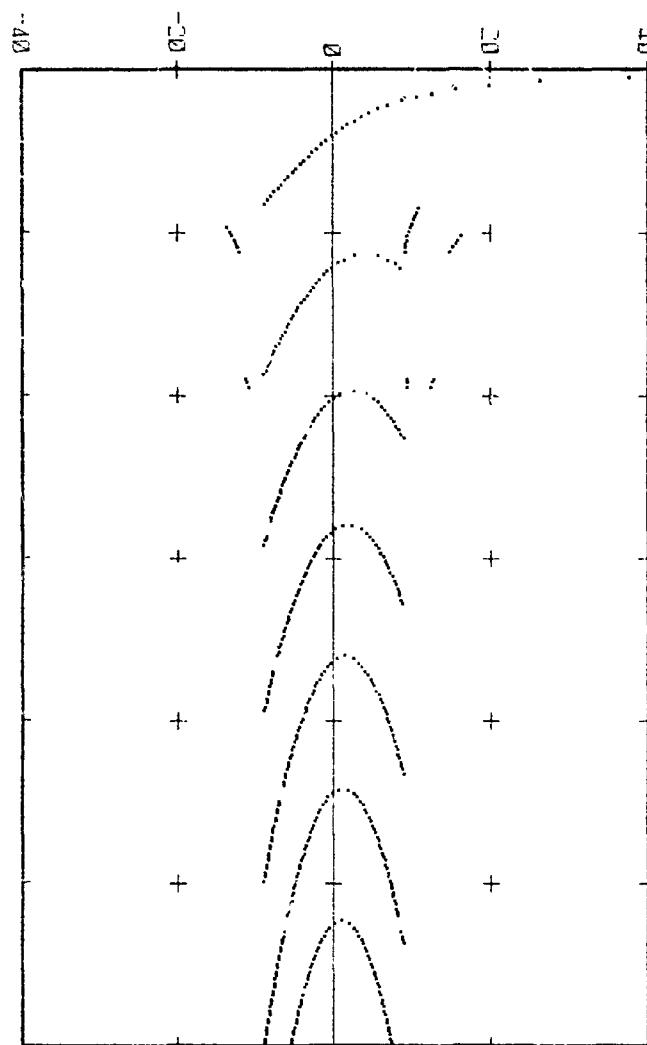
130
110
100
90
80
70
60
50
40
30
20
10
0

RANGE (KIOS) -300 -200 -100 -50 0 100 200 300

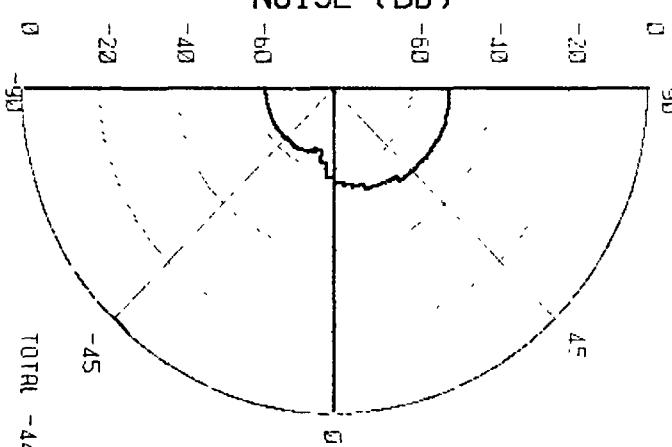
5000
4000
3000
2000
1000
0

DEPTH IN METERS

ARRIVAL ANGLE



NOISE (DB)



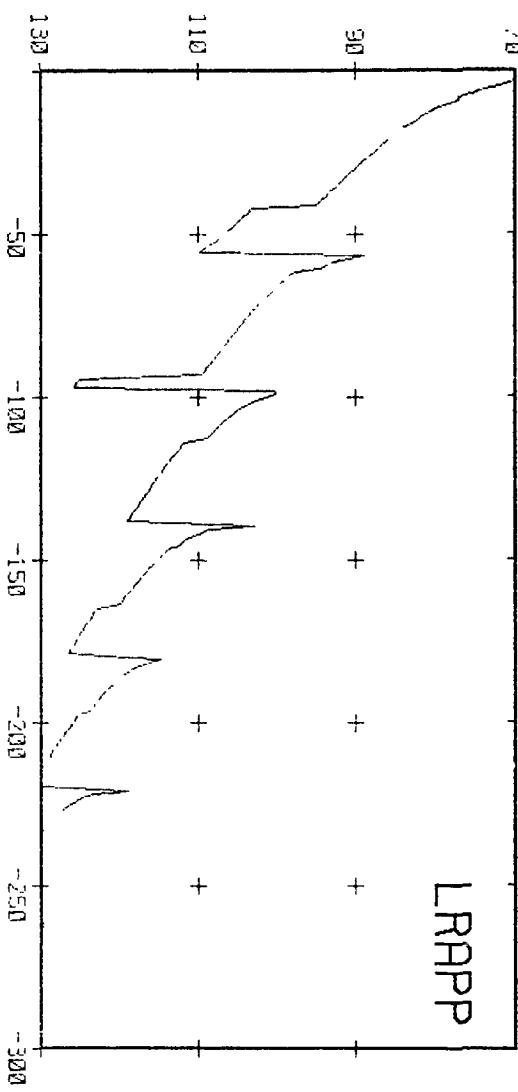
AREA 33 WINTER

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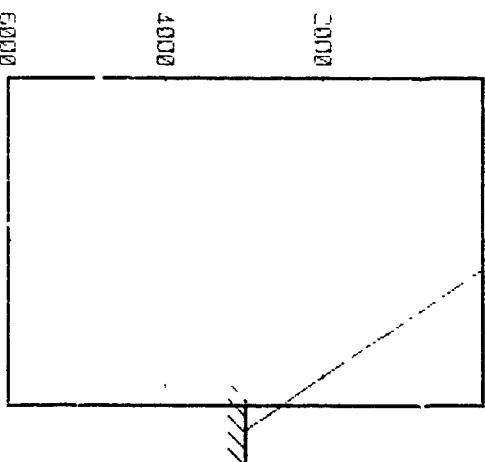
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L RAPP

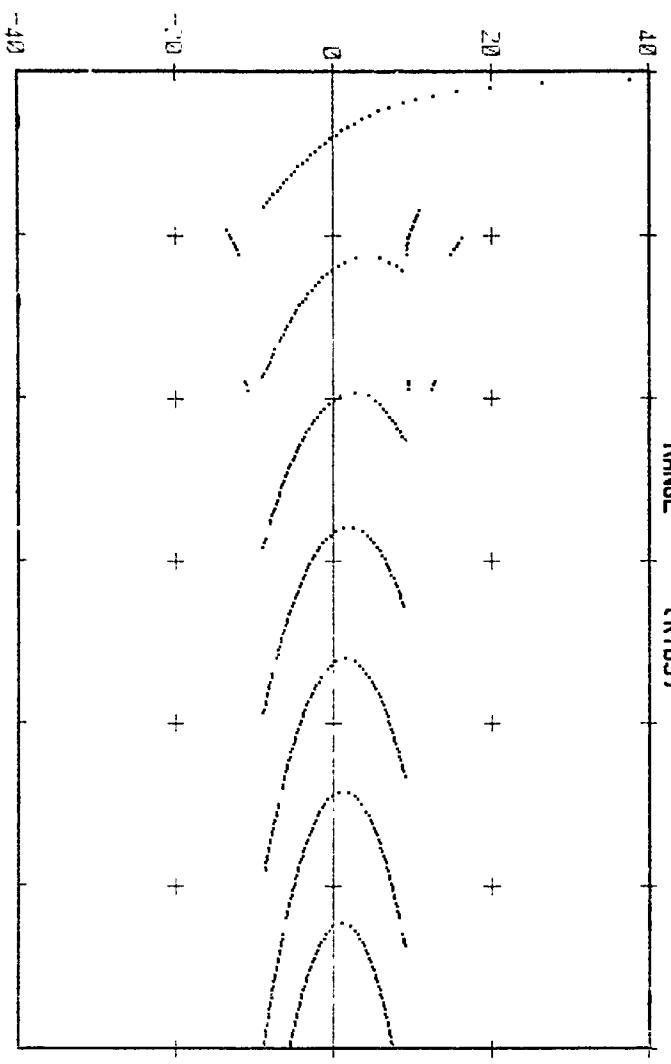
DB LOSS



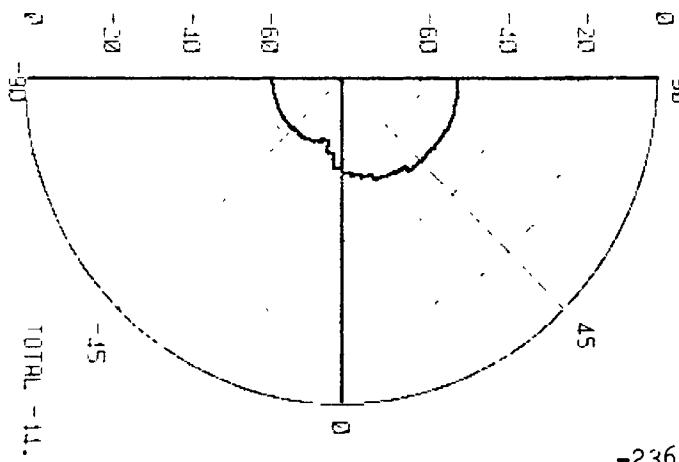
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

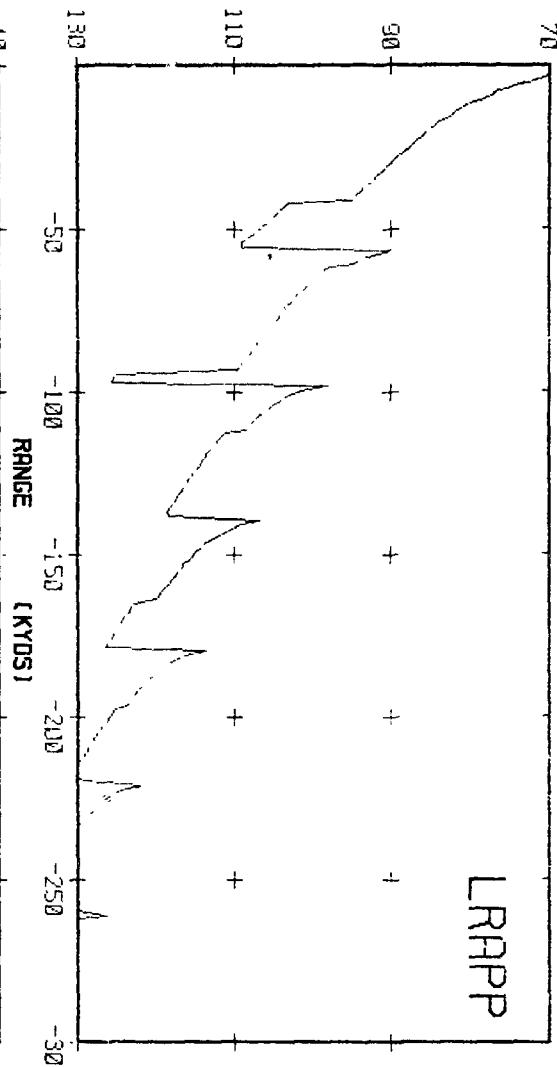
AREA 3B WINTER

S 300 R 67° 9 F 2500

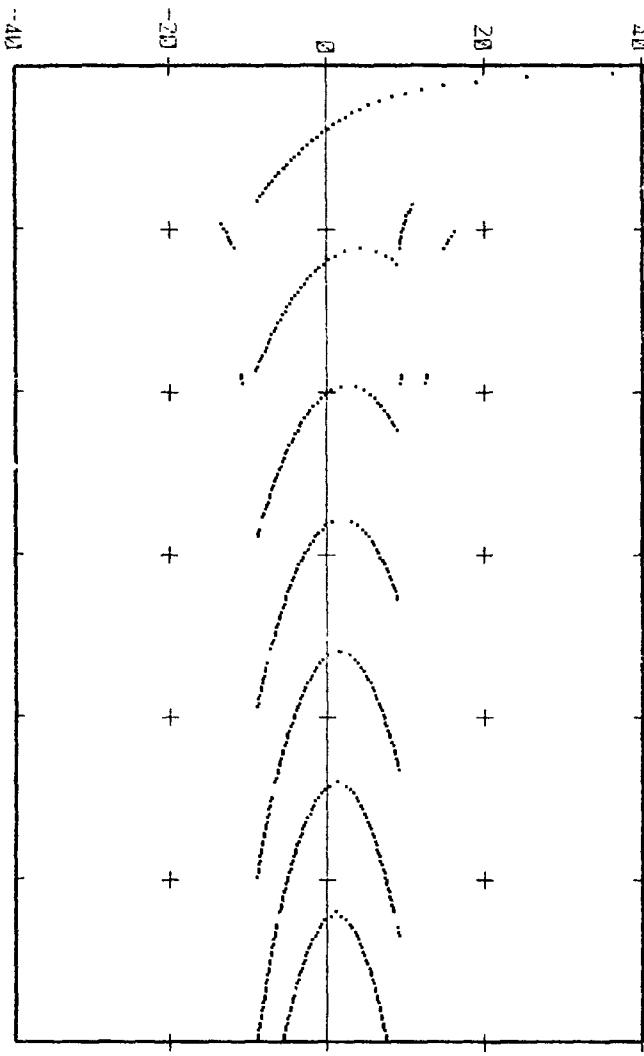
1450 11/5 1500 1550

LRAPP

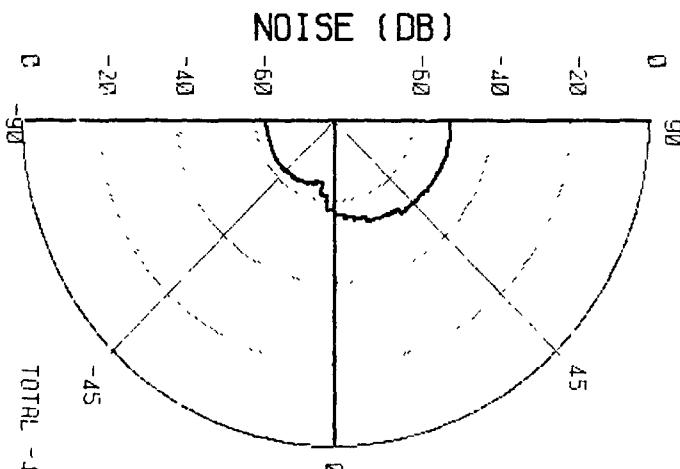
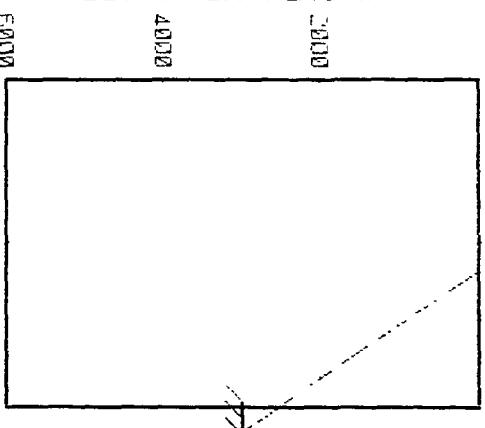
DB LOSS



ARRIVAL ANGLE



DEPTH IN METERS



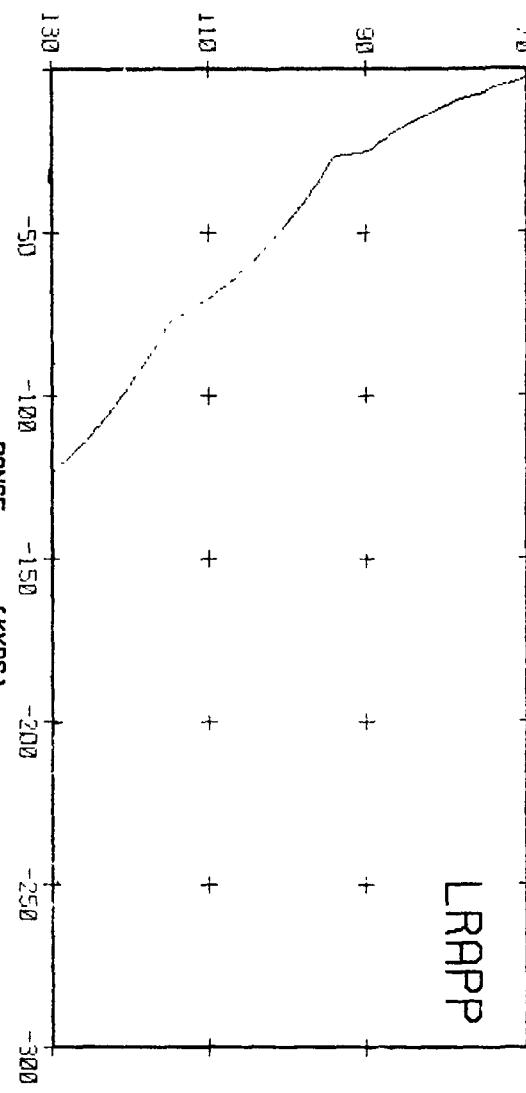
AREA 3B WINTER

S 20 R 9842 F 2500

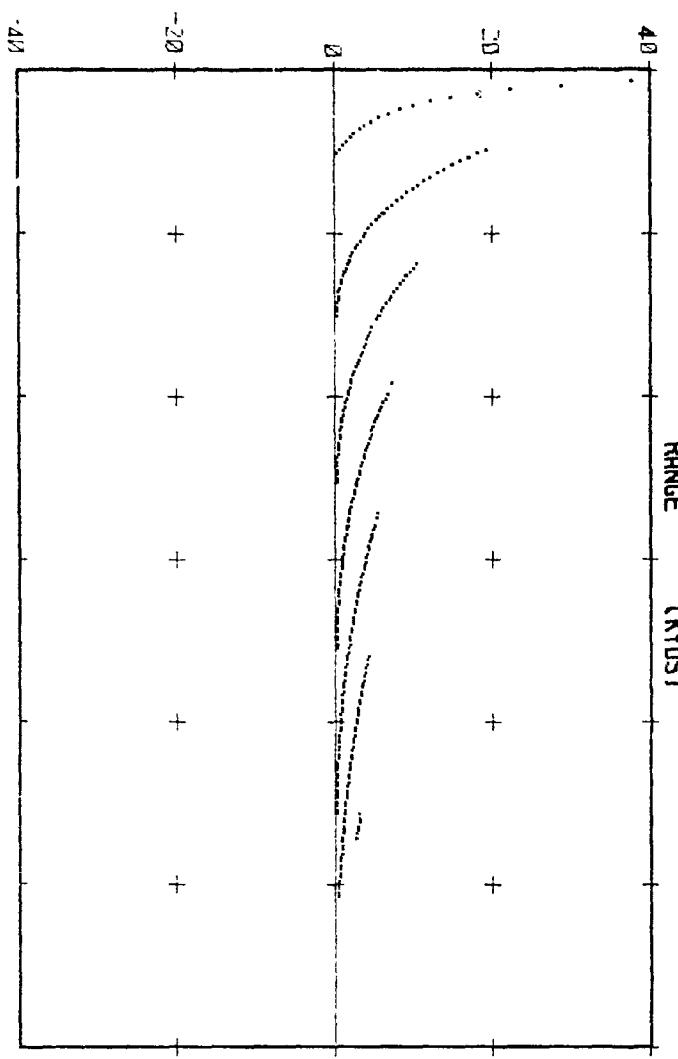
1450 M/S 1500 1550

L RAPP

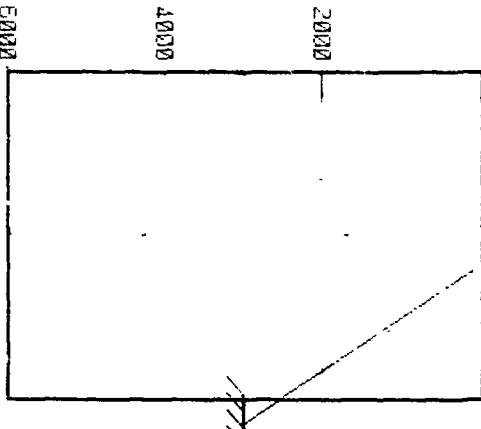
DB LOSS



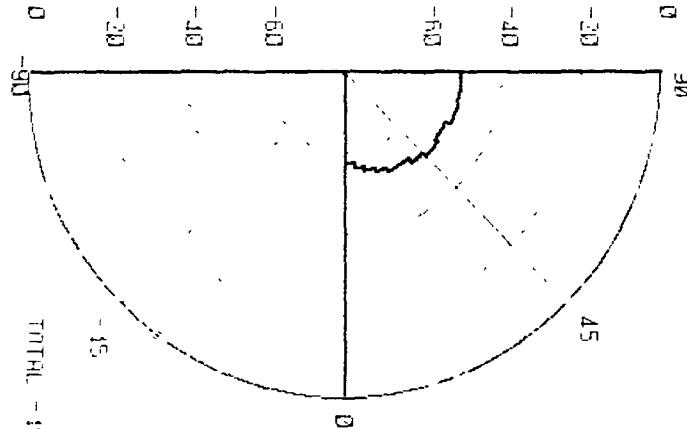
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL = 55.1 DB

AREA 3B WINTER

S 50 R 9842 F 2500

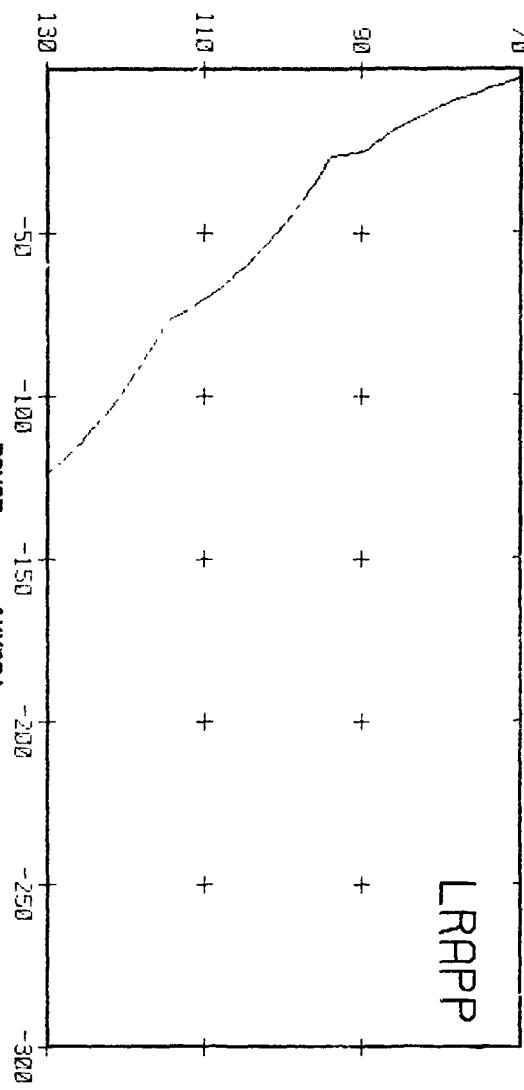
1450 IV/S

1500

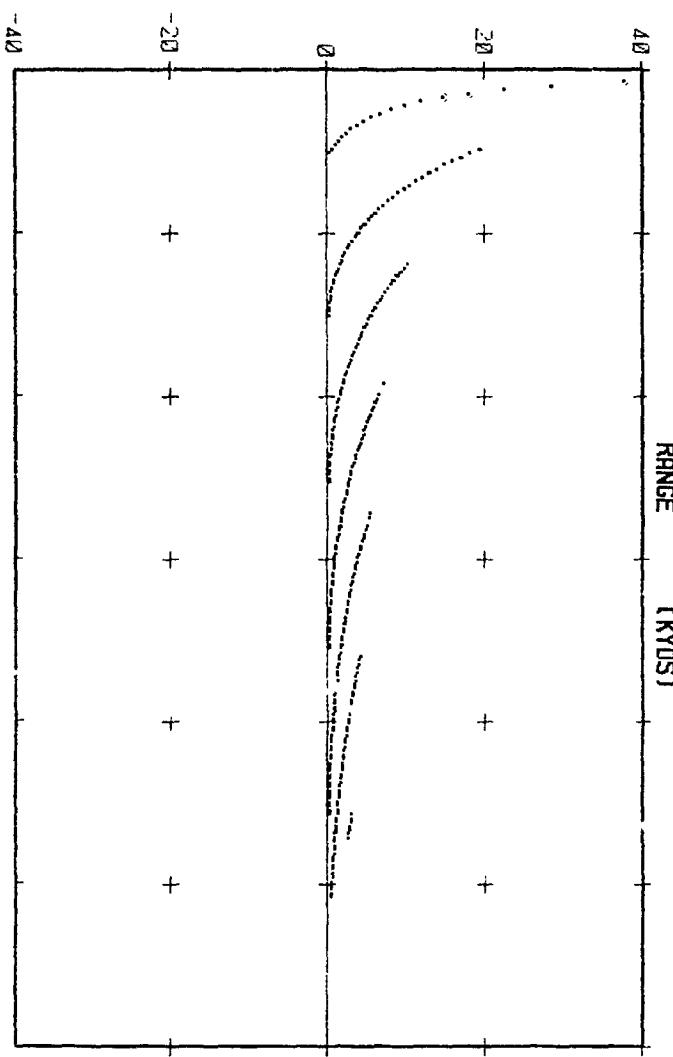
1550

L RAPP

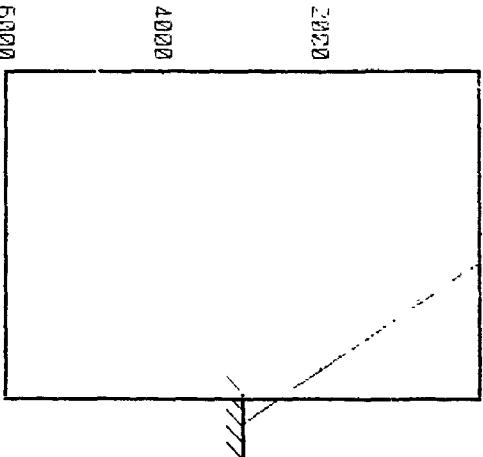
DB LOSS



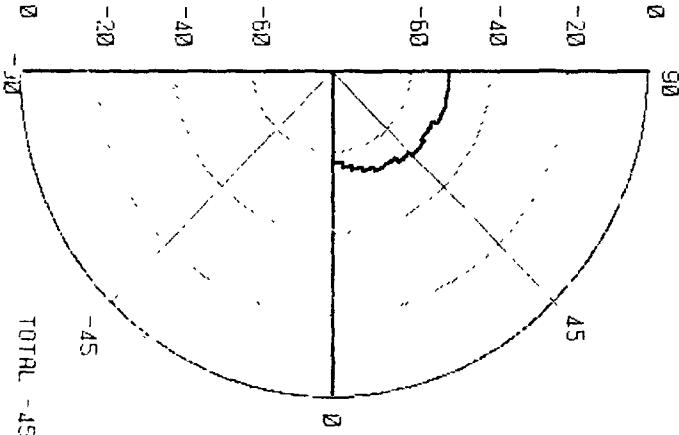
ARRIVAL ANGLE



DEPTH IN METERS

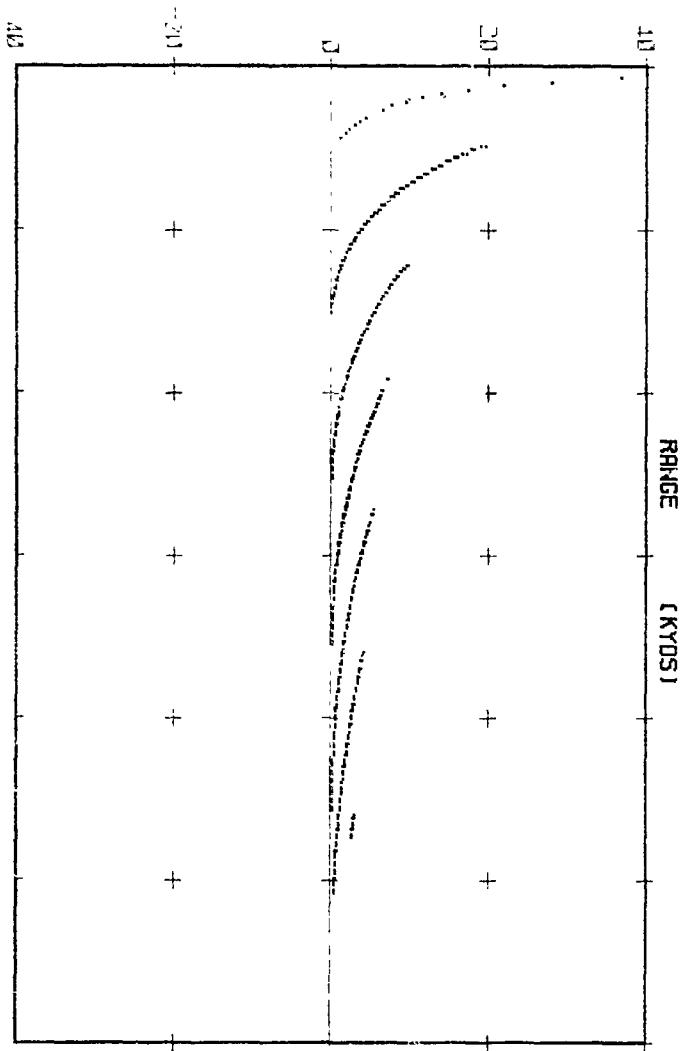


NOISE (DB)

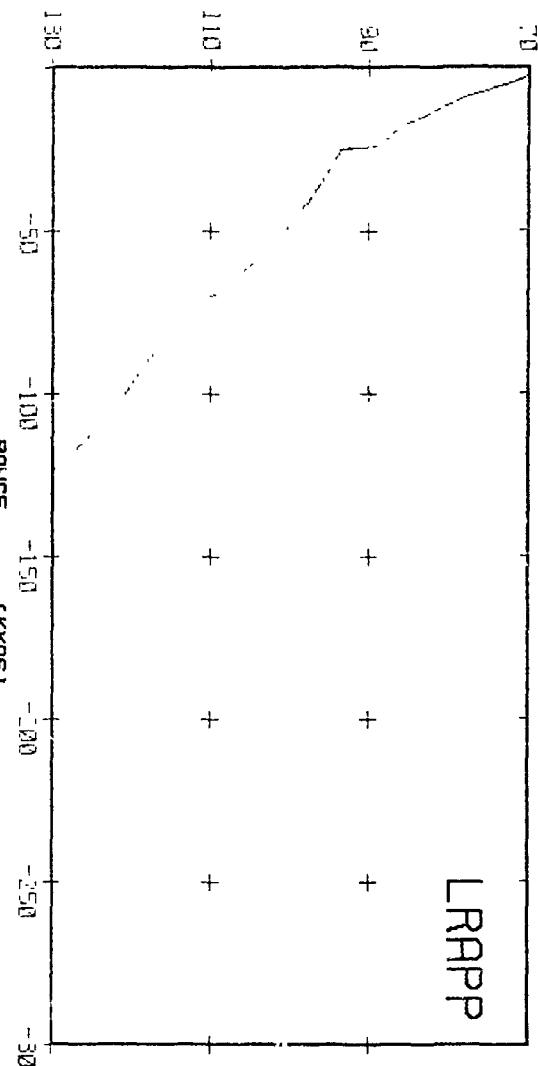


TOTAL -45.1 DB

ARRIVAL ANGLE



DB LOSS

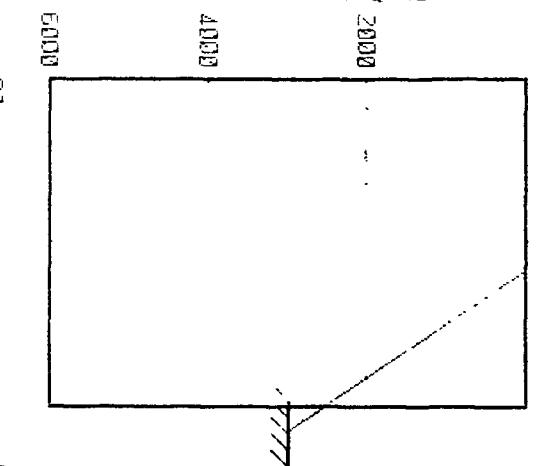


L RAPP

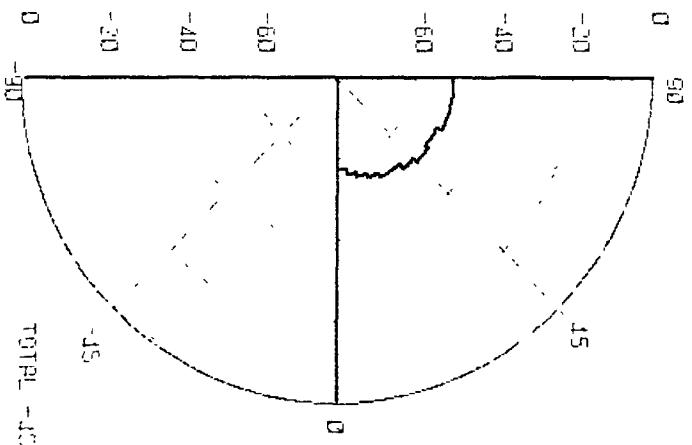
AREA 3B WINTER S 3000 R 98:2 F 2500

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)





DEPARTMENT OF THE NAVY

OFFICE OF NAVAL RESEARCH
875 NORTH RANDOLPH STREET
SUITE 1425
ARLINGTON VA 22203-1995

IN REPLY REFER TO:

5510/1
Ser 321OA/011/06
31 Jan 06

MEMORANDUM FOR DISTRIBUTION LIST

Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT (LRAPP) DOCUMENTS

Ref: (a) SECNAVINST 5510.36

Encl: (1) List of DECLASSIFIED LRAPP Documents

1. In accordance with reference (a), a declassification review has been conducted on a number of classified LRAPP documents.
2. The LRAPP documents listed in enclosure (1) have been downgraded to UNCLASSIFIED and have been approved for public release. These documents should be remarked as follows:

Classification changed to UNCLASSIFIED by authority of the Chief of Naval Operations (N772) letter N772A/6U875630, 20 January 2006.

DISTRIBUTION STATEMENT A: Approved for Public Release; Distribution is unlimited.

3. Questions may be directed to the undersigned on (703) 696-4619, DSN 426-4619.

A handwritten signature in black ink, appearing to read "BRIAN LINK".

BRIAN LINK
By direction

Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT
(LRAPP) DOCUMENTS

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Declassified LRAPP Documents

Report Number	Personal Author	Title	Publication Source (Originator)	Pub. Date	Current Availability	Class.
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME VII. AREA 3A SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0910342	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME VIII. AREA 3B WINTER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0910343	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME IX. AREA 3B SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0910344	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME V. AREA 2 SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0911224	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XI. AREA 4A SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0912560	U
Unavailable	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME X. AREA 4A WINTER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0916556	U
MC-011 VOL. 14	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XIV. AREA 5 WINTER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0916557; ND	U
MC-011 VOL. 13	Unavailable	ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XIII. AREA 4B SUMMER PREDICTIONS FOR PASSIVE SONAR	Maury Center for Ocean Science	721001	AD0916610; ND	U
MCR008	Goodman, R. R., et al.	THE NEAT 1 EXPERIMENT (U)	Maury Center for Ocean Science	721001	NS; ND	U
Unavailable	Cherry, W. R.	LRAPP BEAMFORMER	Scripps Institution of Oceanography Marine Physical Laboratory	721015	ADA081876	U
ONR ACR-186	Gregory, J. B.	PROJECT LRAPP TEST BED- TECHNOLOGY USED IN THE DEVELOPMENT OF A DEEP-OCEAN STABLE PLATFORM (U)	Office of Naval Research	721024	AD0915237C ND	U
MC-010	Unavailable	CHURCH GABBRO EXERCISE PLAN- LRAPP (U)	Maury Center for Ocean Science	721026	ND	U
WHOI-72-87	Daubin, S. C., et al.	THE ACODAC SYSTEM	Woods Hole Oceanographic Institution	721101	AD0756628; ND	U
NRLR7516	Fleming, H. S., et al.	PROJECT NEAT 1 ENVIRONMENTAL DATA REPORT (U) (USNS J.W. GIBBS)	Naval Research Laboratory	721129	AD NS: ND AD 523746	U